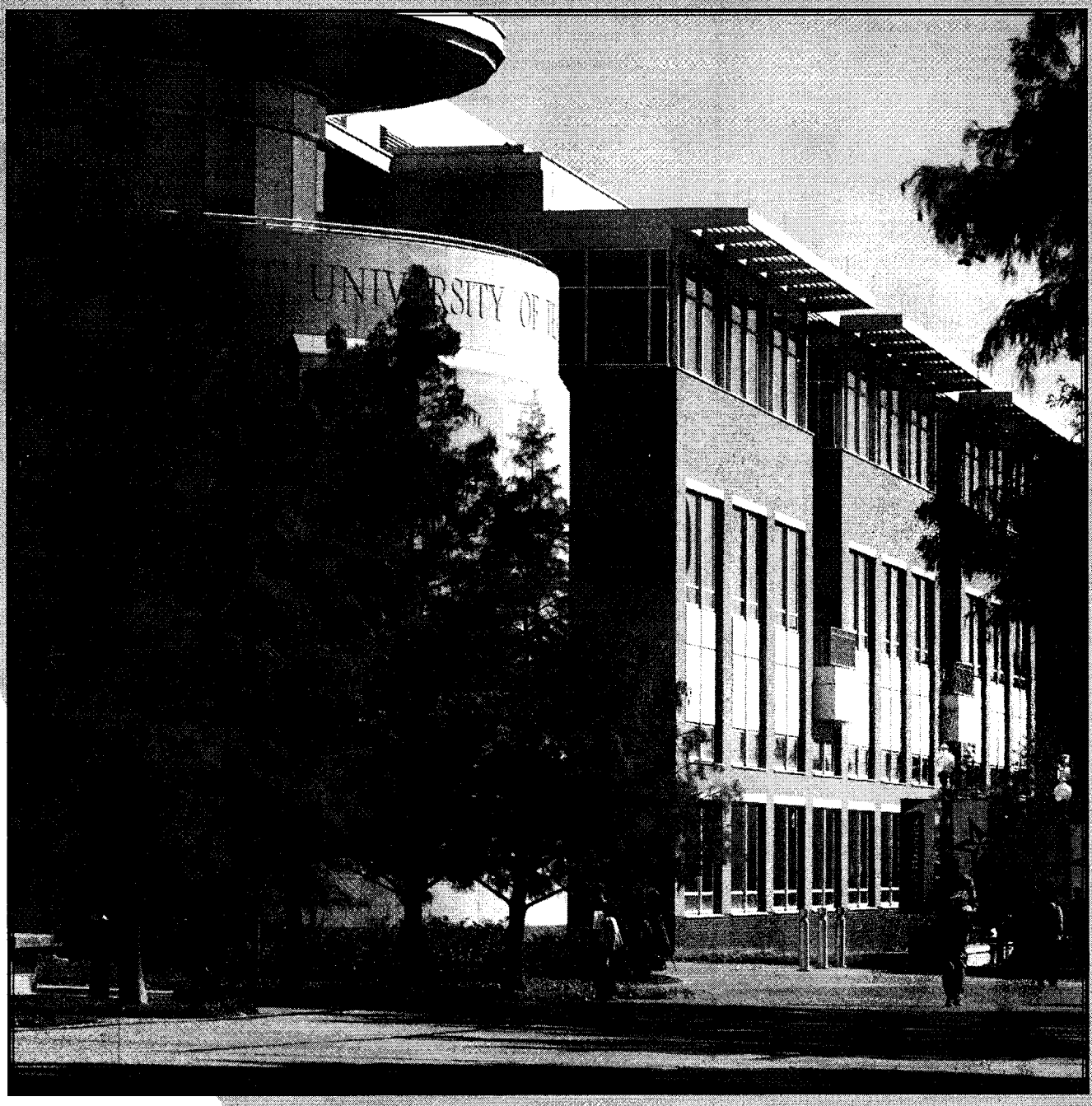

The University of Texas at Arlington®

Graduate Catalog 2008 - 2010

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Contents

The UT Arlington Academic Calendar is available online at http://www.uta.edu/uta/acadcal/

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The University of Texas at Arlington

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The University of Texas at Arlington

University Profile

The University of Texas at Arlington is located in the heart of the Dallas/Fort Worth Metroplex, one of the fastest growing areas in the nation. UT Arlington is a Carnegie doctoral-extensive teaching, research and public service university offering an array of baccalaureate, master's, doctoral and professional degrees. A modern 392-acre campus a few blocks from downtown Arlington offers easy access to museums, concerts, ballet, theater, family recreation, professional sports and other amenities.

Founded in 1895 as Arlington College, a private liberal arts institution, UT Arlington has undergone a succession of names, ownerships and missions. The University was elevated to senior college status in 1959 and was transferred from the Texas A&M System to The University of Texas System in 1965. Its final name change came in 1967, when it became The University of Texas at Arlington.

The University of Texas at Arlington has an enrollment of about 25,000 students. The student body is diverse with students representing almost every state in the United States and more than 100 countries. The University's academic units include the School of Architecture, College of Business Administration, College of Education, College of Engineering, Honors College, College of Liberal Arts, School of Nursing, College of Science, School of Social Work, and School of Urban and Public Affairs. Additionally, the Graduate School oversees the administration of academic programs beyond the baccalaureate level.

In response to societal needs, UT Arlington has evolved into a renowned university within the state and one of emerging position nationally and internationally. The University's history of achievement can be attributed to its outstanding faculty; a strong student body; a record of success by graduates in their respective fields; and the growth of the Dallas/Fort Worth area as a nationally and internationally significant metropolis.

Mission Statement

The University of Texas at Arlington is a comprehensive research, teaching, and public service institution whose mission is the advancement of knowledge and the pursuit of excellence. The University is committed to the promotion of lifelong learning through its academic and continuing education programs and to the formation of good citizenship through its community service learning programs. The diverse student body shares a wide range of cultural values and the University community fosters unity of purpose and cultivates mutual respect.

As a University, we affirm our commitment to the following objectives:

- The University is committed to comprehensive programs of academic research. This research effort requires attracting and retaining scholars who promote a culture of intellectual curiosity, rigorous inquiry, and high academic standards among their fellow faculty and the students they teach.
- The University prepares students for full, productive lives and informed and active citizenship. To that end, we have developed undergraduate and graduate curricula and classroom practices that engage students actively in the learning process. Outside the classroom a wide range of student organizations and activities contribute to the learning environment. Our service learning program offers students the opportunity to supplement their academic study with internships in a variety of community settings, testing their skills and aptitudes and challenging their values. State-of-the-art teaching technologies, distance education, and off-site instruction afford access to off-campus as well as traditional students. Non-degree certificate and continuing education programs offer practical, aesthetic, and intellectually stimulating opportunities for community learners, for individual courses or a sustained program of study.
- The mission of a university can be achieved only when its students, faculty, staff, and administrators value and promote free expression in an atmosphere of tolerance, responsibility, and trust. The University regards these attributes as prerequisites for any community of learners and vigilantly strives to maintain them.
- Mindful of its role as a resource to the community, locally, nationally, and internationally, the University continually seeks partnerships with public and private concerns in order to advance the economic, social, and cultural welfare of its constituencies. We serve the needs of the North Texas community by sponsoring public lectures and academic symposia, as well as artistic, musical, and dramatic productions.

Accreditation

The University of Texas at Arlington is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award baccalaureate, master's and doctoral degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation status of The University of Texas at Arlington.

In addition, many of UT Arlington's academic departments and schools have received national accreditation from specific agencies. These accreditations are detailed under the individual listings for departments and schools in this catalog.

Since 1993, students and faculty of The University of Texas at Arlington have benefited from its membership in Oak Ridge Associated Universities. ORAU is a consortium of 98 colleges and universities and a contractor for the U.S. Department of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep its members informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.

Through the Oak Ridge Institute for Science and Education (ORISE), the DOE facility that ORAU operates, undergraduates, graduates, postgraduates, as well as faculty enjoy access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines including business, earth sciences, epidemiology, engineering, physics, geological sciences,

pharmacology, ocean sciences, biomedical sciences, nuclear chemistry and mathematics. Appointment and program length range from one month to four years. Many of these programs are especially designed to increase the numbers of under-represented minority students pursuing degrees in science- and engineering-related disciplines. A comprehensive listing of these programs and other opportunities, their disciplines, and details on locations and benefits can be found in the ORISE Catalog of Education and Training Programs, which is available at www.orau.gov/orise/educ.htm, or by calling either of the contacts below.

ORAU's Office of Partnership Development seeks opportunities for partnerships and alliances among ORAU's members, private industry and major federal facilities. Activities include faculty development programs, such as the Ralph E. Powe Junior Faculty Enhancement Awards, the Visiting Industrial Scholars Program, consortium research funding initiatives, faculty research and support programs as well as services to chief research officers.

For more information about ORAU and its programs, contact:

Ronald L. Elsenbaumer
Vice President for Research
ORAU Councilor for The University of Texas at Arlington

Monnie E. Champion
ORAU Corporate Secretary (865-576-3306); or

Visit the ORAU home page (www.orau.org)

Government

The government of UT Arlington is vested in a nine-member Board of Regents of The University of Texas System, nominated by the governor and approved by the Senate. The Office of the Chancellor is the chief administrative office of The University of Texas System and is located in Austin. The chief administrative officer of UT Arlington is the University president, under the authority of the Office of the Chancellor of the UT System and the Board of Regents. A complete statement of the authority and duties of the Regents and of the several officers, together with an account of the organization of the system, is published in the Rules and Regulations of the Board of Regents of The University of Texas System.

Equal Opportunity Policy

The University of Texas at Arlington complies with the Equal Pay Act of 1963, Titles VI and VII of the Civil Rights Act of 1964, Executive Order 11246, the Age Discrimination in Employment Act of 1967, Title IX of the Educational Amendments of 1972, Sections 503 and 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, 1990, the Vietnam Era Veterans Readjustment Act of 1974, the Texas Commission on Human Rights Act and the Rules and Regulations of the Board of Regents of The University of Texas System.

It is the policy of The University of Texas at Arlington that to the extent provided by these applicable laws no person shall, on the basis of race, color, national origin, religion, age, sex, disabilities or veteran status, be denied employment or admission, be excluded from participation in, be denied the benefits of or subject to discrimination under, any program or activity that it sponsors or conducts. It is also the University's policy to maintain an environment free from discrimination on the basis of sexual orientation.

Inquiries concerning the application of this policy and complaints of discrimination should be directed to the Office of Equal Opportunity and Affirmative Action, 710 S. Davis Drive, Office and Classroom Building (OCB), Room 103, 817-272-2106. E-mail: eoaa@uta.edu. Web site: **www.uta.edu/eoaa**.

Sexual Harassment, Sexual Misconduct and Consensual Relationships Policy

The University of Texas at Arlington is committed to an academic and working environment free from inappropriate conduct of a sexual nature. Sexual harassment is a prohibited practice under Title VII of the Civil Rights Act of 1964 for employees as amended by the Equal Employment Opportunity Act of 1973, and the Texas Commission on Human Rights Act for students under Title IX of the Education Amendments of 1972. Sexual harassment, sexual misconduct and consensual relationships between faculty members and the students they currently teach or supervise, and between employees in positions of authority and their subordinates, are prohibited under University policy and are sanctionable.

Sexual harassment includes, but is not limited to, unwelcome sexual advances, requests for sexual favors, insults, sexual threats, innuendoes and other verbal or physical conduct of a sexual nature under circumstances where: 1) submission to such conduct is made either explicitly or implicitly a term or condition of employment (or a student's status in a course, program or activity); 2) submission to or rejection of such conduct by an employee is used as a basis for employment decisions affecting the individual (or in the case of a student, it is used as a basis for academic or other decisions affecting a student); or 3) such conduct has the purpose or effect of unreasonably interfering with the individual's employment (or the student's educational experience), or of creating an intimidating, hostile or offensive academic environment.

Inquiries concerning the application of this policy and complaints of sexual harassment should be directed to the Office of Equal Opportunity and Affirmative Action, 710 S. Davis Drive, Office and Classroom Building (OCB), Room 103, 817-272-2106. E-mail: eoaa@uta.edu. Web site: **www.uta.edu/eoaa**.

UT Arlington/Fort Worth Center

UT Arlington/Fort Worth Center strives to serve the Fort Worth area with excellence in accessible, state-of-the-art, and affordable higher education. The Fort Worth Center is committed to:

- meeting the lifelong learning needs of working professionals
- offering graduate as well as upper-division undergraduate programs
- having the vision and flexibility to capitalize on global opportunities that address the economic development needs of the community

UT Arlington/Fort Worth Center has partnered with Tarrant County College (TCC) to offer UT Arlington junior/senior level Business Administration courses that lead to a BBA degree in Management at TCC Northeast campus as well as the Fort Worth Center Santa Fe Station in downtown Fort Worth.

UT Arlington/Fort Worth offers master's degree programs tailored for working professionals. The Executive MBA cohort program is designed for upper-level executives and can be completed in 15 months.

The cohort-based Professional MBA program starts every fall and spring semesters and takes 24 months to complete. The cohort-based Master of Science in Healthcare Administration spans 24 months. The Master of Science in Engineering Management is also cohort in nature and takes 24 months from start to finish. The Scholars of Practice program is uniquely designed for graduate students seeking their Master of Education degree with Texas principal certification. This field-based administrator preparation experience spans five consecutive university semesters over an 18-month period. The Master of Science in Systems Engineering is a 36-hour program offered by the College of Engineering that consists of classroom and online instruction. The program takes 24 months to complete. Beginning in the Summer 2008, the Center will offer a Master of Science in Information Systems, that can be completed in just 16 months. The objective of this program is to provide managers of various functional business areas the necessary knowledge to effectively interface with the Information Technology organization. Beginning in the Fall 2008 semester the School of Urban and Public Affairs will be offering a Master of Public Administration cohort at the Fort Worth Center. The degree can be completed in 24 months and will be focused on Urban Management. These UT Arlington/Fort Worth Center programs and course offerings are the highest quality and most affordable of their kind in the Tarrant County region.

In addition, UT Arlington/Fort Worth Center provides select noncredit professional development and continuing education courses in downtown Fort Worth.

UT Arlington/Fort Worth Center has an excellent central location in downtown Fort Worth at 1401 Jones Street, Fort Worth, Texas 76102. Please access the UT Arlington/Fort Worth Center's Web site, **www.uta.edu/fortworth**, for more information. The main information phone number is 817-272-5988.

Center for Distance Education

The Center for Distance Education serves as an information and coordination site for distributed education efforts at UT Arlington. University undergraduate and graduate courses and degree programs are delivered off-campus in numerous electronic formats, including videotape/DVD, videoconferencing and via the Internet. Center staff promote and support the use of both established and emerging digital tools for teaching and learning.

For more information on the Center for Distance Eduction, located at 201A E. Abram St., call 817-272-5727 or 888-UTA-DIST. Fax: 817-272-5728. E-mail: info@distance.uta.edu. Web site: **http://distance.uta.edu**.

UT TeleCampus

Launched in May 1998, the UT TeleCampus is a central support service for online education initiatives among the 15 UT System institutions. Students may complete selected online courses and degree programs entirely at a distance. The UT TeleCampus also provides selected student services in addition to online learning opportunities.

For more information on the UT TeleCampus and its offerings, visit **www.telecampus.utsystem.edu.**

The Graduate School

Dean of Graduate Studies: Philip Cohen, Ph.D.
333 Davis Hall • Box 19167 • 817.272.3186 • https://grad.uta.edu

Mission and Philosophy

The Graduate School is administratively located in the Office of Graduate Studies.

The goal of graduate study at UT Arlington is to develop a student's potential for original research, scholarship, creative expression and teaching in his or her chosen field of endeavor. Graduate study actively involves students in research, creative and scholarly pursuits that develop factual knowledge and acquisition of skills and techniques in an environment that values and promotes discovery, innovation, and the spirit of creative scholarship. In support of these goals, the Office of Graduate Studies ensures university-wide standards of quality, access and equity in graduate programs and promotes the interests of UT Arlington's graduate students and graduate education at state, national and international levels.

History and Overview

The Graduate School is the focus of advanced studies and research in the University. A graduate faculty of more than 400 makes the Graduate School an important influence in creating high standards for academic accomplishment and in achieving an intellectual environment of the highest quality for the University community.

The Graduate School of The University of Texas at Arlington was established in 1966 with the initiation of six master's degree programs. Doctoral degree programs were added in 1969 with a Ph.D. in engineering. Today the University offers master's degrees in 74 disciplines or interdisciplinary programs and 34 doctoral degree programs.

Graduate School Web Site

Students and applicants are encouraged to visit the Graduate School Web site at **https://grad.uta.edu** to locate important information about graduate programs and the admissions process. The Web site is organized into user groups that link students with all the important Web resources on campus.

1. Prospective students may use the Virtual Graduate Admissions Counselor link located at this Web site to find admission and application information as well as application forms. Interested students may use this link to request information be mailed directly to them.
2. Many people considering graduate study at The University of Texas at Arlington visit our campus to attend a Graduate Forum. This provides an opportunity to evaluate programs in detail and meet graduate advisors and faculty. Information about these events and a convenient reservation system are provided on the Web site through the Graduate Forums Week link located on the Graduate School's main Web page.
3. Newly admitted students are encouraged to visit this Web site and complete a virtual orientation that quickly familiarizes them with advising, registration and vital campus support.
4. Newly admitted and currently enrolled students can obtain information on Graduate School rules and procedures, and obtain forms needed by current graduate students through the Virtual Graduate School Advisor link located on the Web site.
5. The Graduate School Web site provides students a gateway to excellent service. All interested individuals may use the Web site to gain access to a host of career, research and academic support tools.

Directory of Offices

All telephone numbers are Dallas/Fort Worth Metroplex numbers and carry the 817 area code. The University postal zip code is 76019. To contact Graduate Advisors, see the individual departmental and program descriptions in this catalog.

Office/Location	(AC 817) Telephone	Fax	E-Mail Address	Web Address
Dean of Graduate Studies				
Room 333, Davis Hall	272-2688	272-1494*	graduate.school@uta.edu	https://grad.uta.edu
Graduate Admissions				
Room 333, Davis Hall	272-2688	272-1494*	graduate.school@uta.edu	https://grad.uta.edu
Testing Services				
Room 201, Davis Hall	272-2362	272-7532	testing@uta.edu	http://www.uta.edu/testing
Career Services				
Room 216, Davis Hall	272-2932	272-5792	careers@uta.edu	http://careers.uta.edu
Counseling Services				
Room 216, Davis Hall	272-3671	272-5523	---	http://counseling.uta.edu
Financial Aid & Scholarships				
Room 252, Davis Hall	272-3561	272-3555	fao@uta.edu	http://www.uta.edu/fao
Health Services				
605 S. West St.	272-2771	272-3829	healthservices@uta.edu	http://www.uta.edu/healthservices
Housing				
Room 150, University Center	272-2791	272-2717	housing@uta.edu	http://www.uta.edu/housing
International Education				
Swift Center, 1022 UTA Blvd.	272-2355	272-5005	international@uta.edu	http://www.uta.edu/oie
Office for Students with Disabilities	272-3364	272-1447		
Room 102, University Hall	800-RELAY TX (TDD)		dianne@uta.edu	http://www.uta.edu/disability
Multicultural Affairs				
Room B150, University Center	272-2099	272-3722	multicultural_affairs@uta.edu	http://www.uta.edu/multicultural
SOAR Learning Services				
Room 132, Hammond Hall	272-3684	272-3770	---	http://www.uta.edu/soar
Student Judicial Affairs				http://www.uta.edu/
Room B160, University Center	272-2354	272-5221	---	studentaffairs/judicialaffairs
Student Legal Services				
Room B160, University Center	272-3771	272-5221	---	http://www2.uta.edu/attorney
Transcripts and Records				
Room 129, Davis Hall	272-3372	272-3223	records@uta.edu	http://www3.uta.edu/registrar
Veterans Benefits				
Room 129, Davis Hall	272-3373	272-7013	va@uta.edu	http://www2.uta.edu/vets

*For correspondence only. Application materials are not accepted by fax.

Advanced Degrees and Requirements

The University of Texas at Arlington offers graduate degrees through the departments and programs indicated in the specialization areas noted.

School of Architecture

Architecture

Architecture, *M.ARCH.*

Landscape Architecture

Landscape Architecture, *M.L.A.*

College of Business Administration

Accounting

Accounting, *M.S.*
Business Administration-Accounting, *Ph.D.*
Flexible M.B.A.-Accounting, *M.B.A.*
Professional Accounting, *M.P.A.*
Taxation, *M.S.*

Business Administration

Accelerated (Part-time Cohort), *M.B.A.*
Accelerated M.S. in Health Care Administration, *M.S.*
Executive MBA, *M.B.A.*
Flexible M.B.A with concentrations, *M.B.A.*
Health Care Administration, *M.S.*
Online MBA, *M.B.A.*

Economics

Business Administration-Economics, *Ph.D.*
Economics, *M.A.*
Economics, *M.B.A.*
Flexible M.B.A.- Economics, *M.B.A.*

Finance and Real Estate

Business Administration-Finance and Real Estate, *Ph.D.*
Flexible M.B.A.-Finance, *M.B.A.*
Flexible M.B.A.-Real Estate, *M.B.A.*
Quantitative Finance, *M.S.*
Real Estate, *M.S.*

Information Systems and Operations Management

Business Administration (Information Systems), *Ph.D.*
Business Administration (Management Sciences), *Ph.D.*
Flexible M.B.A.-Information Systems and Mgmt. Sciences, *M.B.A.*
Information Systems, *M.S.*
Operations Management, *M.B.A.*

Management

Business Administration-Management, *Ph.D.*
Flexible M.B.A.-Management, *M.B.A.*
Human Resource Management, *M.S.*

Marketing

Business Administration-Marketing, *Ph.D.*
Flexible M.B.A.-Marketing, *M.B.A.*
Marketing Research, *M.S.*

College of Education

Education

Curriculum and Instruction, *M.Ed.*
Educational Leadership and Policy Studies, *M.Ed.*
Educational Leadership and Policy Studies (K-16), *Ph.D.*
Physiology in Exercise (Kinesiology), *M.S.*
Teaching, *M.Ed.T.*

College of Engineering

Aerospace Engineering

Aerospace Engineering, *M.ENGR.*
Aerospace Engineering, *M.S.*
Aerospace Engineering, *Ph.D.*

Bioengineering

Biomedical Engineering, *M.S.*
Biomedical Engineering, *Ph.D.*

Civil and Environmental Engineering

Civil Engineering, *M.ENGR.*
Civil Engineering, *M.S.*
Civil Engineering, *Ph.D.*

Computer Science and Engineering

Computer Science, *M.S.*
Computer Science, *Ph.D.*
Computer Science and Engineering, *M.S.*
Computer Science and Engineering, *Ph.D.*
Software Engineering, *M.SW.ENGR.*

Electrical Engineering

Electrical Engineering, *M.ENGR.*
Electrical Engineering, *M.S.*
Electrical Engineering, *Ph.D.*

Industrial & Manufacturing Engineering

Engineering Management, *M.S.*
Industrial Engineering, *M.ENGR.*
Industrial Engineering, *M.S.*
Industrial Engineering, *Ph.D.*
Industrial Engineering: Logistics, *M.S.*
Systems Engineering, *M.S.*

Materials Science and Engineering

Materials Science and Engineering, *M.ENGR.*
Materials Science and Engineering, *M.S.*
Materials Science and Engineering, *Ph.D.*

Mechanical Engineering

Mechanical Engineering, *M.ENGR.*
Mechanical Engineering, *M.S.*
Mechanical Engineering, *Ph.D.*

College of Liberal Arts

Anthropology
Anthropology, *M.A.*

Art and Art History
Art, *M.F.A*

Communication
Communication, *M.A*

Criminology and Criminal Justice
Criminology and Criminal Justice, *M.A.*

English
English, *M.A.*
English, *Ph.D.*

History
History, *M.A.*
Transatlantic History, *Ph.D.*

Humanities
Humanities, *M.A.*

Linguistics
Linguistics, *M.A.*
Linguistics, *Ph.D.*
TESOL (Teaching English to Speakers of Other Languages), *M.A.*

Modern Languages
Modern Languages (French/Spanish), *M.A.*

Music
Music Education, *M.M.*

Philosophy and Humanities
Philosophy, *Ph.D. (Cooperative program with U.N.T.)*

Political Science
Political Science, *M.A.*

Sociology
Sociology, *M.A.*

School of Nursing

Nursing Administration, Bachelor's to Ph.D. Bound
Nursing Clinical, Bachelor's to Ph.D. Bound
Nursing, *Ph.D.*
Nursing Administration, *M.S.N.*
Nurse Practitioner, *M.S.*

College of Science

Biology
Biology, *M.S.*
Quantitative Biology, *Ph.D.*

Chemistry & Biochemistry
Chemistry, *M.S.*
Chemistry, *Ph.D.*

Earth and Environmental Sciences
Geology, *M.S.*

Environmental and Earth Sciences
Environmental and Earth Sciences, *M.S.*
Environmental and Earth Sciences, *Ph.D.*

Interdisciplinary Science
Interdisciplinary Science, *M.A.*

Mathematics
Mathematics, *M.A.*
Mathematics, *M.S.*
Mathematics, *Ph.D.*

Physics
Physics, M.S.
Physics and Applied Physics, *Ph.D.*

Psychology
Psychology (General Experimental or with specialization in Health, Psychology, or Industrial/Organizational Psychology), *M.S.*
Psychology (General Experimental or with specialization in Health Psychology), *Ph.D.*

School of Social Work

Social Work
Social Work, *M.S.S.W.*
Social Work, *Ph.D.*

School of Urban & Public Affairs

City and Regional Planning
City and Regional Planning, *M.C.R.P.*

Public Administration
Online M.P.A., *M.P.A.*
Public Administration, *M.P.A.*

Urban and Public Affairs
Public and Urban Administration, *Ph.D.*
Urban Affairs, *M.A.*
Urban Planning and Public Policy, *Ph.D.*

Graduate Degrees

The University of Texas at Arlington offers the following post-baccalaureate degrees:

Master of Arts
Master of Fine Arts
Master of Science
Master of Architecture
Master of Business Administration
Master of City and Regional Planning
Master of Education
Master of Education in Teaching
Master of Engineering
Master of Landscape Architecture
Master of Music
Master of Professional Accounting
Master of Public Administration
Master of Science in Nursing
Master of Science in Social Work
Master of Software Engineering
Doctor of Philosophy

Certificates

The University of Texas at Arlington offers graduate certificates in many areas. Requirements for each of these certificates are described under the Catalog listing for the department or program specified in parentheses.

College of Business Administration

- Tax Certificate Program (Accounting)
- Certificate in Real Estate Development (Finance and Real Estate)
- Certificate Programs for Managers and Executives* (Graduate Business Services)
- Health Care Administration

College of Education

- Initial Teacher Certification**
  - Early Childhood - Grade 4 (ECA)
  - EC-4 Generalist
  - EC-4 Bilingual Generalist
  - Mid Level: 4th-8th Grade
  - Secondary: 8th-12th Grade
  - All Level Certification (EC-12)
- Professional Certificates**
  - Gifted and Talented
  - Reading Specialist (w/ESL)
  - Bilingual
  - English as a Second Language (ESL)
  - Master Reading Teacher (MRT)
  - Master Tech. Teacher (MTT)
- Principal
  - Principal*
  - Probationary Certificate for Principal Professional Service
  - Superintendent Certificate*

College of Engineering

- Manufacturing (Industrial Engineering)
- Certificate in Electronic Packaging (Mechanical & Aerospace Engineering)

College of Liberal Arts

- Archival Administration (History)
- Graduate Certificate in TESOL (Linguistics)
- Certificate in Performance (Music)

College of Nursing

- Nurse Practitioner Certificate Programs
  - Acute Care Nurse Practitioner
  - Acute Care Pediatric Practitioner
  - Adult Nurse Practitioner*
  - Emergency Nurse Practitioner
  - Family Nurse Practitioner*
  - Gerontological Nurse Practitioner*
  - Pediatric Nurse Practitioner*
  - Psychiatric-Mental Health Nurse Practitioner*
- Nurse Education Certificates
  - Nursing Education
  - Nurse Educator Role
  - Advanced Nurse Educator Role

College of Science

- Certificate in Environmental Science (Environmental and Earth Sciences)
- Certificate in Hazardous Materials and Waste Management (Environmental and Earth Sciences)
- Spatial Information Systems certificate (Earth and Environmental Sciences)
- Petroleum Geosciences certificate (Earth and Environmental Sciences)
- Teacher Professional Development Programs
  - Certificate in Biology Education
  - Certificate in Chemistry Education
  - Certificate in Elementary Science
  - Certificate in Environmental Science
  - Certificate in Geology Education
  - Certificate in Mathematics Education
  - Certificate in Physics Education
  - Certificate in Psychology Education

School of Urban and Public Affairs

- Certificate in Public Manager Program**
- Geographic Information Systems
- Urban Nonprofit Management
- Urban Journalism
- Development Review
- Law and Public Policy
- Public Budgeting and Financial Management

*Requires Master's degree for admission.
**Preparation for professional, state or national certification.

Requirements for the Master's Degree

The following minimum requirements apply to all master's degrees, including the M.A., M.S., M.Arch., M.B.A., M.C.R.P., M.C.S., M.Engr., M.SW.Engr., M.Ed., M.Ed.T., M.F.A., M.L.A., M.P.A. (Accounting), M.P.A. (Public Administration), M.S.N. and M.S.S.W., offered by The University of Texas at Arlington. Additional requirements may be imposed for specialized or professional degree programs, or by individual departments or interdepartmental or intercampus graduate studies committees. These requirements are included in descriptions of individual degree programs.

Departmental, Program and College Program Manuals for Students

Many departments and programs issue program manuals, procedures and policy manuals, graduate student handbooks and other informational publications for students and faculty in graduate programs. These publications provide detailed and useful information; however, they are not statements of official policy of The University of Texas at Arlington nor of The University of Texas System. In all matters, the Rules and Regulations of the Board of Regents of The University of Texas System, the Handbook of Operating Procedures of The University of Texas at Arlington, and the Graduate Catalog of The University of Texas at Arlington shall supersede departmental, program or college publications.

Graduate Program Degree Requirements and Academic Performance Standards for Master's Degrees

Degree requirements and academic performance standards given in this section are the minimum required by Graduate School and University policy. Satisfying these general requirements and standards, however, does not imply that all degree and program requirements have been met. Many programs set special course requirements and may require higher grade-point averages or other academic standards than those given in this section. Such program requirements and standards are included in individual program descriptions in this catalog and in departmental and college program manuals or policy statements. These special requirements shall not be considered in conflict with this catalog and will have the same force as this catalog.

Undergraduate Preparation

Minimum undergraduate preparation acceptable for graduate concentration in most areas is 12 semester hours of advanced undergraduate work in that area; however, this requirement varies widely, and individual department and program descriptions should be consulted for specific requirements. The appropriate Committee on Graduate Studies may administer an oral, written, or both oral and written examinations to an applicant to assess undergraduate preparation for graduate work. The committee may require the student to eliminate deficiencies in undergraduate preparation before being granted unconditional acceptance into the graduate program.

Residence

Master's degree candidates are expected to spend the equivalent of two semesters of full-time study in residence at The University of Texas at Arlington.

Supervising Committees

The Dean of Graduate Studies will appoint for each master's student a supervising committee upon recommendation by the Graduate Advisor and the appropriate Committee on Graduate Studies. The committee will normally consist of at least three members of the graduate faculty and will be responsible for the design of the student's program. One qualified external person who is not a member of the graduate faculty may serve as a voting member of a supervising committee if nominated by the appropriate Committee on Graduate Studies and approved by the Dean of Graduate Studies. The nomination form is available in the Graduate School and should be submitted to the Dean of Graduate Studies along with the nominee's curriculum vitae. Any external, non-voting members must be in addition to the three voting members and must be approved by the Dean of Graduate Studies. The supervising committee conducts the final thesis examination for thesis degree plan candidates and determines scope, content and form of the final master's comprehensive examination for thesis substitute and non-thesis degree plan candidates.

Degree Plans and Hours Required

Three degree plans (thesis, thesis substitute and non-thesis) leading to the master's degree are available. All programs, except those in Education and Public Administration, offer the thesis degree plan. In certain departments and programs, a student may follow a thesis substitute or non-thesis degree plan upon recommendation of the appropriate Committee on Graduate Studies and approval by the Dean of Graduate Studies. Plans available in each department or program are listed in the catalog in the section on departmental and program descriptions.

The **thesis degree plan** requires a minimum of 30 semester hours, of which at least 24 must be in coursework and six in a thesis course. The thesis must be approved by the thesis advisor and the supervising committee members. The thesis is subject to final approval by the Dean of Graduate Studies. Students receiving advice and assistance from a faculty member in the preparation of a thesis must register for the appropriate course even if they are not on campus. Each semester, after consulting with their Graduate Advisor, students must register for the amount of thesis credit commensurate with the efforts to be expended by the student and the thesis advisor in the preparation of the thesis. Once the student is enrolled in the thesis course, continuous enrollment is expected. The student must be enrolled in six hours of thesis during the semester in which the thesis is defended and the final Master's Examination is unconditionally passed. The degree candidate must defend the thesis in a final oral examination open to all members of the faculty.

The **thesis substitute degree plan** requires a minimum of 33 semester hours, of which at least 27 must be in coursework and three in an appropriate project or research course. The thesis substitute may include: 1) internship reports in programs in which the internship has been determined by the Dean of Graduate Studies to be an essential component; 2) reports prepared in certain graduate seminar, conference or research courses; or 3) a design project in Architecture. The internship substitute requires a minimum of six semester hours in the internship course.

The **non-thesis degree plan** requires a minimum of 36 semester hours of coursework, of which at least 24 must be in the major area(s) of study.

Tentative Program of Work

A Tentative Program of Work listing all transfer courses, courses in progress and courses required by the student's committee or department may be filed in the Graduate School. This is typically done before a student completes 12 hours of graduate study. If students desire approval to apply up to nine semester hours of transfer credit to their degree program, the Tentative Program of Work may be used to make the request and establish that those courses will satisfy degree requirements at The University of Texas at Arlington. In all degree plans, the entire degree program must be approved by the appropriate Committee on Graduate Studies and the Dean of Graduate Studies.

Application for Graduation

Students will be admitted to candidacy for the master's degree only when degree requirements have been met. Students must submit an Application for Graduation to the Graduate School by the deadline listed in the Academic Calendar in the semester they wish to graduate. The Application for Graduation form is available online through the Virtual Graduate School Advisor on the Graduate School Web site. See the Graduate School calendar available online at **https://grad.uta.edu/leftMenuPages/gradcalendar.asp** for specific deadline dates.

Final Master's Examination

A final program examination is required for all master's degree candidates. The final master's examination can result in 1) an unconditional pass with a recommendation to the Dean of Graduate Studies that the candidate be certified to receive the earned degree; 2) a conditional pass with the requirement that additional conditions be met, which may include further work on the thesis or thesis substitute, additional coursework with a minimum specified grade-point average, or both (in both cases, the final master's examination must be repeated within a specified period); 3) failure, with permission to be re-examined after a specified period; or 4) failure, with recommendation to the Dean of Graduate Studies that the candidate be dismissed from the program. Most programs limit to two the number of repeats of the final master's examination. Additional repeats require specific advanced written approval by the Dean of Graduate Studies.

For **thesis degree plan** candidates, the examination will be an oral defense of the thesis. The examination will be conducted by all members of the student's supervising committee but will be open to all members of the faculty. The thesis examining committee must have copies of the thesis at least two weeks prior to the thesis defense.

For **thesis substitute** or **non-thesis degree plan** candidates, the final examination will be a comprehensive examination that is written, oral or both. The scope, content and form of the examination(s) are determined and administered by all members of the student's supervising committee. Some programs require successful completion of a specified course in the final semester of study to satisfy this requirement.

If applicable, the student's Graduate Advisor must submit a request for the thesis defense or final master's examination to the Graduate School no later than two weeks before the proposed examination date. The request must indicate the time, place and form (oral and/or written) of the examination and be signed by all members of the examining committee, confirming their intention to be present.

The Final Master's Examination Report must be filed in the Graduate School no later than three weeks before the date on which the candidate expects the degree to be conferred. Thesis degree plan candidates must submit one electronic or three unbound paper copies of the unconditionally passed thesis that has been approved for final submission by the Graduate School following all procedures for electronic or paper submission. Candidates will be billed for the required fees as explained in the Tuition and Fees section of this catalog. Details of the submission process and all forms are available through the Virtual Graduate School Advisor.

Master's Thesis

All master's students must be aware of requirements, components and deadlines associated with the thesis, final defense and submission of the thesis to the Graduate School. Thesis format review and approval by the Graduate School are required and must be completed in order to graduate from UT Arlington. The deadline dates for each semester are published in the Graduate School Calendar at **https://grad.uta.edu/leftMenuPages/gradcalendar.asp.**

Enrollment Requirement

A thesis degree plan student must be enrolled in the appropriate thesis course in the semester in which the thesis is defended. Social work students will enroll in SOCW 6393 to conduct thesis research and SOCW 6398 in the semester in which the thesis is defended. All other thesis option students must be enrolled in the appropriate 6 hour thesis course in the semester in which the thesis is defended.

Thesis Manuscript Preparation

Students pursuing a thesis option master's degree must have the format of the thesis manuscript approved by the UT Arlington Graduate School before the degree can be conferred. The Graduate School specifically checks the document for conformity to UT Arlington formatting requirements. Details regarding thesis formatting requirements are described in the current edition of *The UTA Manual of Style and the RAFT Template* available online through the Virtual Graduate School Advisor and Turabian's *A Manual for Writers of Term Papers, Theses, and Dissertations* (6th ed.). A template for students to use as a guide to proper thesis formatting and appearance is available under the "Thesis and Dissertation" in the section titled "Manual of Style and RAFT Template."

The Graduate School offers all master's students the opportunity to attend Thesis and Dissertation Seminars each semester. These seminars provide attendees with detailed explanations of the style guides and hands-on experience with the template that will help students organize their theses in accordance to formatting requirements. In addition, thesis submission procedures, graduation procedures and graduation requirements are reviewed in these seminars. Reservations are recommended and can be made online through the Virtual Graduate School Advisor.

Master's Thesis Format Review

The format of all theses must be reviewed and approved by the Graduate School before the theses will be accepted as satisfying the thesis requirement of the Master's degree. Students may submit theses to the Graduate School for checking as an electronic file using the electronic thesis and dissertation submission process or as hardcopy.

Preliminary Format Check

Thesis students have the option to submit a portion of the thesis to the Thesis and Dissertation Specialist in the Graduate School for a preliminary format check. The preliminary format check is not a requirement for graduation and is provided as a service for students who have questions regarding formatting. Students can generally ex-

pect feedback regarding the preliminary check within 72 hours (excluding weekends and holidays). However, students should be aware that completed theses submitted for mechanical check will be given priority over preliminary check submissions.

Mechanical Check

In order to fulfill thesis requirements, master's thesis students must submit a copy of their thesis to the Thesis and Dissertation Specialist in the Graduate School for a complete review of the format of the entire manuscript. This review is called the mechanical check. Students may be required to resubmit the document for additional checks depending on the nature and number of formatting errors found. The final copies of the thesis may be submitted to the Graduate School only when it the mechanical check conducted by the Thesis and Dissertation Specialist shows that the thesis is formatted properly. Thus, the thesis submitted for mechanical checking should be complete and as near to being in final format as possible.

Generally, students may expect the mechanical check to be completed within 72 hours of submission (excluding weekends and holidays). However, expect the mechanical check to take longer than 72 hours during peak submission periods which occur around submission deadlines. Semester deadlines for mechanical checks can be found in the Graduate School calendar at **https://grad.uta.edu/leftMenuPages/gradcalendar.asp.**

Final Copies and Submission

Once the Thesis and Dissertation Specialist has approved the thesis and the student has unconditionally passed the thesis defense, the student may submit the final copy of the thesis to the Graduate School for approval by the Dean of Graduate Studies. Students submitting electronically need only submit one copy through the electronic thesis and dissertation process. Students submitting on paper must provide three unbound copies printed on minimum 25% cotton rag, minimum 20 lb. paper and each copy must be placed in separate, clearly labeled envelopes and accompanied by the Thesis and Dissertation Checklist and other required documents.

Regardless of submission format, all theses must be submitted by the deadline for final submission as listed on the Graduate Calendar online at **https://grad.uta.edu/leftMenuPages/gradcalendar.asp** and must be prepared according to regulations described in the current edition of *The UTA Manual of Style and the RAFT Template* available online through the Virtual Graduate School Advisor and Turabian's *A Manual for Writers of Term Papers, Theses, and Dissertations* (6th ed.). All thesis students must also submit the Thesis and Dissertation Data Sheet, the Intellectual Property Statement, and the appropriate Thesis and Dissertation Checklist. Students choosing to submit theses in hardcopy format must also submit the Microfilm Agreement Form. This form is not necessary when theses are submitted electronically. All forms are available online through the Virtual Graduate School Advisor.

The final copy or copies of the thesis are University property and a student may make no private agreements with employers, funding sources, or others that restrict or infringe upon University rights. Thesis copyrights, where applicable, are held by the student author. Thesis fees are explained in the Tuition and Fees section of the Graduate Catalog.

Thesis Defense

A request for the thesis defense must be filed in the Graduate School by the student before the date of the defense. The thesis supervising committee must have copies of the dissertation at least two weeks prior to the thesis defense.

The thesis defense will be a public oral examination open to all members of the faculty. Questioning of the candidate will be directed by the student's thesis supervising committee. All members of the student's committee must be present at the defense.

Although the defense is concerned primarily with the thesis research and its interpretation, the examining committee may explore the student's knowledge of areas relevant to the core of the thesis problem.

The thesis defense may result in a decision that the candidate has 1) passed unconditionally; 2) passed conditionally with remedial work specified by the committee; 3) failed, with permission to be re-examined after a specified period; or 4) failed and dismissed from the program. The thesis must be approved unanimously by the student's thesis supervising committee and by the Dean of Graduate Studies.

Regardless of the outcome of the defense, the thesis defense report must be submitted to the Dean of Graduate Studies. When a scheduled defense is postponed or canceled, the Dean of Graduate Studies must receive written notice of this postponement or cancellation.

The final approved electronic copy or the final three approved unbound paper copies of the thesis must be submitted to the Dean of Graduate Studies by the date specified in the Graduate School Calendar available at **https://grad.uta.edu/leftMenuPages/gradcalendar.asp**. When the final copy or copies are deposited with the Graduate School, the student will be billed for the required fees as explained in the Tuition and Fees section of this catalog.

Time Limit

Programs for the master's degree must be completed within six years (time in military service excluded) from initial registration in the Graduate School.

Foreign Language Requirement

A reading knowledge of at least one foreign language (classical or modern) is required by some departments or programs for master's degree candidates. Specific language requirements, if any, are given in the individual departmental and program degree descriptions.

Dual Degree Programs

Students may pursue dual degree programs other than those specifically defined in the catalog with prior approval of the appropriate Committees on Graduate Studies and the Dean of Graduate Studies. Students wishing to pursue dual degree programs other than those specifically defined in the catalog should contact the Graduate School for details.

Students in any dual degree program must be admitted to each participating program. Unless otherwise stated under the dual degrees programs specified elsewhere in this catalog, the number of hours that may be used jointly will be determined by the total number of hours required by both degree programs if completed separately. For purposes of dual degree programs, the total number of semester hours required for both degrees if completed separately is defined as the number of semester hours required for a student to complete all advanced degree requirements (excluding deficiency, leveling and prerequisite courses) for both degrees.

a. Six semester hours may be used jointly when the total number of hours required for both degrees is 60;

b. Six to 12 semester hours may be used jointly when the total number of hours required for both degrees is between 60 and 72 hours;

c. Six to 18 semester hours may be used jointly when the total number of hours required for both degrees exceeds 72 hours.

Admission to and enrollment in the programs for a dual degree must be concurrent. Students must be admitted to the second program before completing more than 24 semester hours in the first program, exclusive of leveling, deficiency or foundation courses, and must complete the second degree within three academic years following completion of the first.

All grades earned in dual degree status are used for purposes of determining academic good standing, academic probation and graduation requirements.

Students must be in good standing in both programs to continue in a dual degree program. Students who are dismissed from either program are no longer considered to be in a dual degree program. These students may enroll in and use courses for credit toward the degree program in which they are in good standing only. Students may not take courses in the program from which they have been dismissed and may not use such courses for dual degree credit.

Dual degree programs are available at the master's level only. Not all graduate programs participate in dual degrees.

Requirements for the Doctor of Philosophy Degree

The Doctor of Philosophy (Ph.D.) is the highest degree offered by The University of Texas at Arlington. The degree is awarded only for academic work of distinction through which the student demonstrates superior scholarship and capacity for original work. Requirements for the doctoral degree listed below are the minimum required by the Graduate School. Meeting all of these requirements does not result automatically in the awarding of the doctoral degree. All departments and programs have additional requirements for a high level of scholarly achievement that must be met by successful doctoral candidates. In all doctoral programs, the basic requirements are that a student 1) attain mastery of a field of knowledge as determined by the appropriate Committee on Graduate Studies and demonstrated in a general examination; and 2) present evidence of a capacity to complete a significant program of original research by preparation of a dissertation.

To be admitted to a doctoral program, an applicant must have completed a master's degree or at least 30 semester credit hours of graduate coursework.

Departmental, Program and College Program Manuals for Students

Many departments and programs issue program manuals, procedures and policy manuals, graduate student handbooks and other informational publications for students and faculty in graduate programs. These publications may provide detailed and useful information; however, they are not statements of official policy of The University of Texas at Arlington nor of The University of Texas System. In all matters the Rules and Regulations of the Board of Regents of The University of Texas System, the Handbook of Operating Procedures of The University of Texas at Arlington and the Graduate Catalog of The University of Texas at Arlington shall supersede departmental, program or college publications.

Graduate Program Degree Requirements and Academic Performance Standards for Doctoral Degrees

Degree requirements and academic performance standards in the section entitled "Requirements for the Doctor of Philosophy Degree" are the minimum required by Graduate School and University policy.

Satisfying these general requirements does not imply that all degree and program requirements have been met. Many programs set special course requirements and may require higher grade-point averages or other academic standards than those in this section. Such program requirements and standards are included with individual program descriptions in this catalog and in departmental, program, and college program manuals or policy statements. These special course requirements published in departmental, program or college program manuals or policy statements shall not be considered in conflict with this catalog and will have the same force as this catalog.

Residence

Residence requirements vary widely among doctoral programs. For specific requirements, consult the Degree Requirements section under individual departments and programs offering the doctoral degree.

Courses and Semester Hour Requirements

The doctoral degree cannot be earned solely by passing certain courses and accumulating a specified number of credit hours; however, a department or program may require a core group of courses for all of its doctoral students. Courses are generally concentrated in the student's major field, but some are normally taken in one or more complementary minor fields. In interdepartmental programs, the major work may be divided among two or more primary fields.

The Graduate School imposes no specific semester-hour requirements for the doctoral degree except for residence requirements included in individual degree program descriptions.

Foreign Language Requirement

Prior to scheduling the doctoral comprehensive examination, the Graduate School requires evidence that the student has a reading knowledge of one foreign language applicable to the student's field of study or has attained proficiency in a research-tool area such as computer sciences or experimental statistics. Other suitable foreign language substitutes may be approved by the Dean of Graduate Studies.

The Ph.D. program in English requires translation competency in two foreign languages for the Rhetoric Track and in one foreign language for the Literature Track. The Ph.D. program in History requires a reading knowledge of at least one foreign language determined by either four semesters of credit in a single foreign language (grade B average), a standardized test, or a translation exam. The Ph.D. program in Chemistry requires competency in an approved computer language, and the Ph.D. program in Psychology has established a computer knowledge requirement in lieu of the foreign language requirement. For information regarding the foreign language requirement in the Program of Linguistics, contact the Graduate Advisor. There is no foreign language requirement for the Ph.D. in the various engineering fields, but a research tool may be required as determined by the student's committee.

A foreign language requirement may be met by: 1) successfully passing an examination prepared by an appointee of the Dean of Graduate Studies; 2) making an acceptable score on the Educational Test-

ing Service Graduate School Foreign Language Test; or 3) earning a grade of B or higher in French, German or Russian 4331 and 4332, or equivalents. The foreign language substitute requirement may be met by a method determined by the appropriate Committee on Graduate Studies and approved by the Dean of Graduate Studies.

Diagnostic Evaluation

During the student's first year of doctoral program work, the student must demonstrate potential to successfully complete a degree program. The method of assessing the student's potential will be determined by the appropriate Committee on Graduate Studies and may be in the form of a written or oral examination, personal interviews with faculty members, successful completion of certain courses in the first semester of residence, or by any combination of these methods. Results of the diagnostic evaluation may be: 1) approval to continue in the doctoral program; 2) approval to continue with specified remedial work; 3) failure, but with permission for assessment through a second diagnostic evaluation after a specified period; or 4) failure and termination in the program.

The diagnostic evaluation report must be filed in the Graduate School by the student's Graduate Advisor during the student's first year of doctoral program work but no later than the completion of the first 18 semester hours of coursework beyond appropriate master's level coursework, or the equivalent.

After the student successfully completes the diagnostic evaluation, the Dean of Graduate Studies will approve an examining committee, members of which are recommended by the Graduate Advisor and appropriate Committee on Graduate Studies. The committee will consist of no fewer than 3 voting members, at least two of whom must be from the student's major area. One qualified external person who is not a member of the graduate faculty may serve as a voting member of a committee following a request accompanied by documentation, such as a vita, from the appropriate Committee on Graduate Studies to the Dean of Graduate Studies via the nomination form available form the Graduate School for this purpose and approval by the Dean of Graduate Studies. In interdisciplinary programs the committee must have no fewer than four members with at least two members representing each field concerned. Three members in traditional degree programs or four members in interdisciplinary degree programs constitute minimum requirements set by the Graduate School. Individual programs may require the committee to have more members and students are required to conform to such requirements. Students should consult with their program's Graduate Advisor to make sure their committees have sufficient membership to meet program requirements.

The committee is responsible for design and direction of the student's program. After the student has passed the comprehensive examination, the doctoral supervising committee may be altered or expanded to accommodate the dissertation research needs of the student, but the committee must include at least three voting members. Committees in interdisciplinary programs must include at least four voting members with two members coming from each discipline. Any external, non-voting members in addition to the required number of voting members of the committee must be approved by the Dean of Graduate Studies.

Comprehensive Examination

Students are eligible to take the comprehensive examination after giving evidence to their doctoral committee of adequate academic achievement by having completed all or most coursework requirements for a degree. The comprehensive examination usually marks the end of formal coursework and the beginning of concentrated work on dissertation research and preparation. The student must be enrolled in the Graduate School in the semester in which he/she takes the comprehensive examination.

The comprehensive examination may be written, oral or both. Its scope, content and form shall be determined by the student's examining committee with approval of the appropriate Committee on Graduate Studies. The student's Graduate Advisor must submit a Request for the Comprehensive Examination to the Graduate School and the request must indicate the time, place and form (oral and/or written) of the examination and include signatures of all members of the examining committee.

In some departments and programs comprehensive examinations are given semiannually so students should consult their Graduate Advisors in that program for appropriate regulations and procedures.

The comprehensive examination may result in: 1) unconditional pass and recommendation to proceed to the next phase of the program; 2) approval to remain in the program but a requirement to meet certain specified additional criteria; 3) failure, but with permission to retake the examination after a period specified by the examining committee; or 4) failure with recommendation not to continue in the program.

Time Limit

All requirements for the doctoral degree must be completed within four years after the student unconditionally passes the comprehensive examination.

Dissertation

A doctoral candidate/student must be enrolled in a nine-semester hour dissertation course (6999) in the semester in which the dissertation is defended. The dissertation represents the culmination of the student's academic efforts and so is expected to demonstrate original and independent research activity and be a significant contribution to knowledge.

Once the student is enrolled in the dissertation course, continuous enrollment is required. A student receiving advice and assistance from a faculty member in the preparation of a dissertation must register for the appropriate course even if the student is not on campus.

Registration in Doctoral Courses

1. Registration in an individual study, research or similar course implies an expected level of effort on the part of the student that is at least equivalent to that of an organized course of the same credit value.
2. Doctoral students shall not be required to register for more than nine credit hours during any long semester or summer, except that:
   a. Doctoral students who are enrolled in nine credit hours of organized courses and are also doing research related to their dissertation may be required to register for up to three hours of research for a total of 12 credit hours.
   b. Doctoral students supported as a graduate research or teaching assistant may be required to register for 12 credit hours (no more than nine credit hours to be in organized courses), as determined by the students' graduate program.
3. Doctoral students who are required to register solely to satisfy a continuous enrollment requirement shall register for no more than three credit hours during each term.

4. Doctoral students may not register for more than 12 semester hours in a semester or summer session unless such registration is approved in advance by the Dean of Graduate Studies.

Dissertation Requirements

All doctoral students must be aware of requirements and deadlines associated with the dissertation, final defense and submission of the final copies of the dissertation to the Graduate School. The deadline dates for each semester are published in the Graduate School Calendar at **https://grad.uta.edu/leftMenuPages/gradcalendar.asp**.

Enrollment Requirement

Doctoral students must be enrolled in the appropriate 9-hour dissertation course in the semester in which the dissertation is defended.

Dissertation Manuscript Preparation

Students pursuing a doctoral degree must have the format of the dissertation manuscript approved by the Graduate School before the degree can be conferred. The Graduate School specifically checks the document for conformity to UT Arlington formatting requirements. Details regarding dissertation formatting requirements are described in the current edition of *The UTA Manual of Style, and the RAFT Template* available online through the Virtual Graduate School Advisor and Turabian's *A Manual for Writers of Term Papers, Theses, and Dissertations* (6th ed.). A template for students to use as a guide to proper dissertation formatting and appearance is available under "Thesis and Dissertation" in the section titled "Manual of Style and RAFT Template."

The Graduate School offers Thesis and Dissertation Seminars each semester and encourages all Dissertation students to attend. These seminars provide attendees with detailed explanations of the style guides and hands-on experience with the template. In addition, all graduation procedures and requirements are covered in the seminars. Reservations are recommended and can be made online through the Virtual Graduate School Advisor.

Doctoral Dissertation Format Review

The format of all dissertations must be reviewed and approved by the Graduate School before the dissertation will be accepted as satisfying the dissertation requirement of the Doctoral degree. Students may submit dissertations to the Graduate School for checking as an electronic file using the electronic thesis and dissertation submission process or as hard-copy.

Preliminary Format Check

Dissertation students have the option to submit a portion of the dissertation to the Thesis and Dissertation Specialist in the Graduate School for a preliminary format check. The preliminary check is not a requirement for graduation and is provided as a service for students who have questions regarding formatting. Students can generally expect feedback from the preliminary check within 72 hours (excluding weekends and holidays). However, students should be aware that completed theses and dissertations submitted for mechanical check will be given priority over those submitted for preliminary checks.

Mechanical Check

In order to fulfill dissertation requirements, doctoral students must submit a copy of the dissertation to the Thesis and Dissertation Specialist in the Graduate School for a complete review of the format of the entire manuscript. This is called the mechanical check. Students may be required to resubmit the document for additional checks depending on the nature and number of formatting errors found. The final copies of the dissertation may be submitted to the Graduate School only when the mechanical check conducted by the Thesis and Dissertation Specialist reveals that the dissertation is properly formatted. Thus, the dissertation submitted for mechanical checking should be complete and as near to being in final format as possible.

Generally, students may expect the mechanical check to be completed within 72 hours of submission (excluding weekends and holidays). However, expect the mechanical check to take longer than 72 hours during peak submission periods which occur around submission deadlines. Semester deadlines for mechanical checks can be found in the Graduate School calendar (**https://grad.uta.edu/leftMenuPages/gradcalendar.asp**).

Final Copies and Submission

Once the Thesis and Dissertation Specialist has approved the dissertation and the student has unconditionally passed the dissertation defense, the student may submit the final copy of the dissertation to the Graduate School for approval by the Dean of Graduate Studies. Students submitting electronically will be notified when their latest submission is accepted and no further submissions are required. Students submitting dissertations on paper must provide three unbound copies printed on minimum 25% cotton rag, minimum 20 lb. paper and each copy must be placed in separate, clearly labeled envelopes and accompanied by the Dissertation Final Three Checklist.

Regardless of submission format, all dissertations must be submitted by the deadline for final submission (see the online Graduate Calendar, **https://grad.uta.edu/leftMenuPages/gradcalendar.asp**) and must be prepared according to regulations described in the current edition of *The UTA Manual of Style* and the *RAFT Template* available online through the Virtual Graduate School Advisor and Turabian's *A Manual for Writers of Term Papers, Theses, and Dissertations* (6th ed.). All dissertation students must also submit the Thesis and Dissertation Data Sheet, and the Intellectual Property Statement and the appropriate Thesis and Dissertation Checklist. Ph.D. students are also encouraged to complete the Survey of Earned Doctorates. Students choosing to submit their dissertation in hardcopy format must submit the Microfilm Agreement Form. This form is not necessary when the dissertation is submitted electronically. All forms are available online through the Virtual Graduate School Advisor.

The final copy or copies of the dissertation are University property and a student may make no private agreements with employers, funding sources, or others that restrict or infringe upon University rights. Copyrights, where applicable, are held by the student author. Dissertation fees are explained in the Tuition and Fees section of the Graduate Catalog.

Dissertation Defense

A request for the dissertation defense must be filed in the Graduate School by the student before the defense date. The dissertation supervising committee must have copies of the dissertation at least two weeks prior to the dissertation defense.

The dissertation defense will be a public oral examination open to all members (faculty, students and invited guests) of the University community. Questioning of the candidate will be directed by the student's dissertation supervising committee. All members of the student's committee must be present at the defense.

Although the defense is concerned primarily with the dissertation research and its interpretation, the examining committee may ex-

plore the student's knowledge of areas relevant to the core of the dissertation problem.

The dissertation defense may result in a decision that the candidate has 1) passed unconditionally; 2) passed conditionally with remedial work specified by the committee; 3) failed, with permission to be re-examined after a specified period; or 4) failed and dismissed from the program. The dissertation must be approved unanimously by the student's dissertation supervising committee and by the Dean of Graduate Studies.

Regardless of the outcome of the defense, the dissertation defense report must be submitted to the Dean of Graduate Studies. When a scheduled defense is postponed or canceled, the Dean of Graduate Studies must receive written notice of this postponement or cancellation.

The final approved electronic copy or the final three approved unbound paper copies of the dissertation must be submitted to the Dean of Graduate Studies by the date specified in the Graduate School Calendar available at **https://grad.uta.edu/leftMenuPages/gradcalendar.asp**. When the final copy or copies are deposited with the Graduate School, the student will be billed for the required fees as explained in the Tuition and Fees section of this catalog.

Graduation Requirements and Procedures

Degree Conferral

Degrees are awarded at the end of the fall semester (December), spring semester (May) and summer session (August). Formal commencement ceremonies are held within the college or school in which the degree is earned. Candidates should contact the office of the dean of the appropriate unit for instructions concerning participation in the commencement ceremonies.

Degree Requirements

Each graduate student must complete degree requirements in accordance with the Graduate Catalog in force at the time the student entered the graduate program in which the degree will be awarded or, at the student's option, the catalog of any subsequent year in which the student was in residence. If a student chooses to complete degree requirements in accordance with the catalog of a year subsequent to that in which he/she entered the graduate program, the student's graduate advisor must indicate such by submitting an online request form to the Graduate School. The graduate advisor may contact the Office of Graduate Studies graduation desk for access to the required form.

Please note that changes in Graduate School regulations and policies become effective for all enrolled students in the year for which the catalog is in force, regardless of the year of initial enrollment. Thus, students may choose to satisfy degree requirements specified in an earlier catalog, but all must observe Graduate School regulations and follow graduation procedures prescribed in the Graduate Catalog in force in the intended semester of graduation.

Continuous Enrollment

After initial enrollment in the thesis or dissertation course, a student should maintain continuous enrollment in thesis or dissertation courses (summers excluded unless summer enrollment in thesis/dissertation is required by student's program) until the thesis or dissertation has been accepted by the Dean of Graduate Studies. This requirement applies even when a student is working on their thesis or dissertation at an off-campus location. Failure to maintain continuous enrollment may invalidate previous thesis or dissertation work.

Enrollment Requirements for Thesis and Dissertation Courses

Academic Standing

Students may not register for dissertation or thesis courses if they are not in good standing academically.

Credit Hours

A student receiving advice and assistance from a faculty member in preparation of a thesis or dissertation must register for the appropriate course even if the student is not on campus. Variable credit is available for thesis and dissertation courses. Each semester after consulting with their Graduate Advisor, students must register for the amount of thesis or dissertation credit commensurate with the effort to be expended by the student and the thesis or dissertation advisor in preparation of the thesis or dissertation. However, most Master's students must enroll in a six-hour thesis course and all doctoral students must enroll in a nine-hour dissertation course in the semester in which they intend to defend their thesis or dissertation. The six-hour thesis and the nine-hour dissertation courses are graded on a pass/fail basis. A grade of R (research in progress) may be given for thesis or dissertation courses prior to the semester in which the thesis or dissertation is successfully defended and a grade of P awarded. The grade of R is a permanent grade that does not carry any credit value. Therefore, to receive credit students must re-enroll in the six-hour thesis or nine-hour dissertation course until the thesis or dissertation is completed and a grade of P is earned.

Final Semester Requirements

Enrollment Requirements

All students must be enrolled in the Graduate School for the semester in which they complete all graduate degree requirements and apply for graduation. Students defending or completing required changes in their thesis or dissertation in their final semester must be enrolled in the proper six-hour thesis or nine-hour dissertation course to receive a passing grade. Students may not petition for a reduction in this requirement. Enrollment in courses outside the major and minor fields will not satisfy final semester enrollment requirements. Students may request to graduate In Absentia if they have completed all degree requirements and must register simply to have their degrees awarded.

Funded Students Enrollment Requirement

Funded students are normally expected to be enrolled as full time students while holding an assistantship or associateship. Students who must enroll in a six-hour thesis or nine-hour dissertation course because they have not yet received a passing grade in these courses must enroll in them in their final semester. However, master's students who need fewer hours to complete their degrees may petition for a waiver of full time enrollment as described in the Assistantship/Associateship Policy section of this catalog.

In Absentia Registration

In Absentia registration will be allowed when degree candidates have completed all requirements for graduation by the last date to qualify for *In Absentia* registration (see the Graduate School calendar at **https://grad.uta.edu/leftMenuPages/gradcalendar.asp**) and who would otherwise need to register in the following semester for the sole

purpose of having a degree conferred. A student may only request *In Absentia* registration in the regular or summer semester immediately following the semester in which he or she was enrolled and completed all graduation and degree requirements. Students registered *In Absentia* may not enroll for courses. No refund is made for cancellation of *In Absentia* registration. In Absentia registration requires permission of the Graduate Advisor and the Dean of Graduate Studies. Students may obtain the Request to Register *In Absentia* Form from the Graduate School or online through the Virtual Graduate School Advisor. In addition to paying the cost of *In Absentia* registration, candidates must file an application for graduation and pay the appropriate graduation fees for the semester of graduation.

Application for Graduation

All graduating students must file an Application for Graduation with the Graduate School by the deadline specified in the Graduate School calendar for the semester of graduation, typically 30 days after the first day of classes. The application and other information pertaining to graduation requirements may be found by going to the Virtual Graduate School Advisor and selecting Graduation, Graduation Requirements & Award of Certificates. Neither the graduation application nor graduation fees are transferable to a subsequent semester; therefore, if a student does not graduate in the semester indicated in the initial application, that application will be canceled and a new one must be filed for the semester of graduation and the appropriate fees paid. The Graduate School calendar is available at **https://grad.uta.edu/leftMenuPages/gradcalendar.asp**.

Students who fail to apply for graduation by the deadline specified in the Graduate School calendar may apply late by completing the Application for Graduation and paying a late fee. Applications for graduation will be accepted with a late fee for 30 calendar days after the deadline for applying for graduation. (If this date falls on a weekend, the deadline for applying late will be the Monday after the date.) After that date, no applications will be accepted and students must apply for graduation for a subsequent semester. Applicants for graduation will be billed for the diploma fee and, as appropriate, for thesis and dissertation fees and the late fee. Graduation charges are non-transferable and non-refundable. See the section titled Tuition, Fees, and Charges in this catalog for information on specific fees.

Summary of Final Semester Requirements for Master Degree Candidates

Each master's program student must:

Enroll in

1. the six-hour thesis course if a thesis plan student
2. the master's comprehensive course or equivalent if required by the student's program
3. at least one graduate course in the student's program if not enrolled in 1 or 2 above

File (forms are available online through the Virtual Graduate School Advisor)

1. the Application for Graduation
2. a request for the final master's examination
3. the Final Master's Examination Report
4. Students using electronic submission: the appropriate checklist document and documents listed on that checklist. Students using paper submission: three unbound copies of the final approved thesis with completed signature pages, extra title and abstract page in copy #1 and the appropriate checklist document and documents listed on that checklist. (thesis students only)

Pay

1. the diploma fee
2. the diploma mailing fee (if required)
3. the required thesis binding, microfilming and Library Processing fees and the optional copyright fees Students using electronic submission will not be billed for binding. (thesis students only)
4. any other outstanding university charges

Summary of Final Semester Requirements for Doctoral Candidates

Each doctoral candidate must:

Enroll in

1. the nine-hour dissertation course

File (forms are available online through the Virtual Graduate School Advisor)

1. the Application for Graduation
2. request to Schedule Dissertation Defense
3. dissertation Defense Report
4. Students using electronic dissertation submission: the appropriate checklist document and documents listed on that checklist. Students using paper submission: three unbound copies of the final approved dissertation with completed signature pages, extra title and abstract page in copy #1 and the appropriate checklist document and documents listed on that checklist. A request for the dissertation defense

Pay

1. the diploma fee
2. the diploma mailing fee (if required)
3. the dissertation binding, microfilming and (optional) copyright fees and the Library Processing fees. Students using electronic submission will not be billed for binding
4. any other outstanding university charges

Graduate School Deadlines

All Graduate School deadlines, as indicated on the calendar or in the explanation of policies and procedures, unless otherwise stated, are final at 5 p.m. of the date specified. By this time all transactions must be completed and documents received in the Office of the Dean of Graduate Studies. Transactions and documents requiring action or approval of Graduate Advisors, committees, instructors, department chairmen, academic deans or others prior to receipt by the Graduate School should be initiated by the appropriate person (student, instructor, Graduate Advisor or other) sufficiently in advance of the Graduate School deadline for the required actions to be taken and approvals received. The Graduate School calendar is available at **https://grad.uta.edu/leftMenuPages/gradcalendar.asp**.

General Graduate School Regulations and Information: General Policies

Student Responsibility

Graduate students assume full responsibility for knowledge of all Graduate School and University rules, regulations and deadlines published in the Graduate Catalog and of all departmental and program requirements concerning their degree programs.

Academic Dishonesty

All students are expected to pursue their academic careers with honesty and integrity. Academic dishonesty includes, but is not limited to, cheating on a test or other coursework, plagiarism (offering the work of another as one's own) and unauthorized collaboration with another person. Students found responsible for dishonesty in their academic pursuits are subject to penalties that may range from disciplinary probation, suspension or expulsion from the University.

In accordance with the Rules and Regulations of the Board of Regents of The University of Texas System (Rule 50101), institutional procedures regarding allegations of academic dishonesty are outlined in Part Two, Chapter 2, of the UT Arlington Handbook of Operating Procedures. This information may be obtained by accessing the Office of Student Conduct (formerly Student Judicial Affairs) Web site at **www.uta.edu/studentaffairs/conduct**. Copies of each regulation can be obtained in the Dean of Students' Office on the lower level of the University Center.

Student Conduct and Discipline

The University of Texas at Arlington reserves the right to impose disciplinary penalties, including permanent expulsion, against a student for disciplinary reasons. Information about the rules of conduct and due process procedures is published in Rule 50101 of the Rules and Regulations of the Board of Regents of The University of Texas System. The Regents' Rules and Regulations may be accessed at **www.utsystem.edu/bor/rules.htm**. This information is also published in the UT Arlington Handbook of Operating Procedures, copies of which are available in the offices of the Dean of Graduate Studies and Dean of Students.

Hazing

Hazing in educational institutions is prohibited by both state law (Sections 51.936 and 37.151 et seq., Texas Education Code) and by the Regents' Rules and Regulations (Rule 50101). Individuals or organizations engaging in hazing could be subject to fines and charged with criminal offenses. Additionally, the law does not affect or in any way restrict the right of UT Arlington to enforce its own rules against hazing.

According to the law, a person can commit a hazing offense not only by engaging in a hazing activity, but also by soliciting, directing, encouraging, aiding or attempting to aid another in hazing; by intentionally, knowingly or recklessly allowing hazing to occur; or by failing to report firsthand information that a hazing incident is planned or has occurred in writing to the Vice President for Student Affairs or Dean of Students. The fact that a person consented to or acquiesced in a hazing activity is not a defense to prosecution for hazing under this law.

To encourage reporting of hazing incidents, the law grants immunity from civil or criminal liability to any person who reports a specific hazing event to the Office of Student Affairs and immunizes that person from participation in any judicial proceeding resulting from that report. The penalty for failure to report is a fine of up to $1,000, up to 180 days in jail, or both. Penalties for other hazing offenses vary according to the severity of the injury that results and range from $500 to $10,000 in fines and up to two years confinement.

The law defines hazing as an intentional, knowing or reckless act, occurring on or off the campus of an educational institution, by one person alone or acting with others, directed against a student, that endangers the mental or physical health or safety of that student for the purpose of pledging, being initiated into, affiliating with, holding office in or maintaining membership in any organization whose members are or include students at an educational institution. Hazing includes but is not limited to:

- Any type of physical brutality, such as whipping, beating, striking, branding, electronic shocking, placing of a harmful substance on the body or similar activity;
- Any type of physical activity, such as sleep deprivation, exposure to the elements, confinement in a small space, calisthenics or other activity that subjects the student to an unreasonable risk of harm or that adversely affects the mental or physical health or safety of the student;
- Any activity involving consumption of food, liquid, alcoholic beverage, liquor, drug or other substance that subjects the student to an unreasonable risk of harm or that adversely affects the mental or physical health of the student;
- Any activity that intimidates or threatens the student with ostracism, that subjects the student to extreme mental stress, shame or humiliation, that adversely affects the mental health or dignity of the student or discourages the student from entering or remaining registered in an educational institution, or that may reasonably be expected to cause a student to leave the organization or the institution rather than submit to acts described in this subdivision; and
- Any activity that induces, causes, or requires the student to perform a duty or task that involves a violation of the Penal Code. The fact that a person consented to or acquiesced in a hazing activity is not a defense to prosecution.

Campus Solicitations

"Solicitation," as defined in Rule 80103 of the Rules and Regulations of the Board of Regents of The University of Texas System, means the sale, lease, rental or offer for sale, lease, rental of any property, product, merchandise, publication or service, whether for immediate or future delivery; an oral statement or the distribution or display of printed material, merchandise or products that is designed to encourage the purchase, use or rental of any property, product, merchandise, publication or service; the receipt of or request for any

gift or contribution; or the request to support or oppose or to vote for or against a candidate, issue or proposition appearing on the ballot at any election held pursuant to state or federal law or local ordinances. All solicitations on the UT Arlington campus must conform to the Regents' Rules and Regulations, copies of which are available in the offices of the president, vice presidents, academic deans, numerous other administrative offices and the Central Library. The Regents' Rules and Regulations also may be accessed at the following Web site: **www.utsystem.edu/bor/rules.**

Use of Campus Facilities

The property, buildings or facilities owned or controlled by The University of Texas at Arlington are not open for assembly, speech or other activities as are the public streets, sidewalks and parks. No person, organization, group, association or corporation may use property, buildings or facilities owned or controlled by UT Arlington for any purpose other than in the course of the regular programs or activities related to the University's role and mission unless authorized by and conducted in compliance with the Rules and Regulations of the Board of Regents of The University of Texas System, approved rules and regulations of UT Arlington, and applicable federal, state and local laws and regulations.

Student Right-to-Know and Campus Security Act

In compliance with the federal Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act, formerly the Student Right-to-Know and Campus Security Act (P.L. 101-542, as amended), The University of Texas at Arlington publishes specified campus crime statistics and campus security policies through the Office of the Chief of the University Police.

Campus security policies include:

- Procedures for reporting criminal actions or other emergencies occurring on campus.
- Policies concerning security of and access to campus facilities, including campus residences; campus law enforcement authority and responsibilities.
- A description of programs designed to inform students and employees about the prevention of crimes, and campus security procedures.
- The policy of monitoring and recording of students' criminal activity occurring at off-campus locations of student organizations officially recognized by the institution.
- The policy regarding the possession, use and sale of alcoholic beverages and illegal drugs, and enforcement of federal and state drug and drinking laws.
- A description of drug or alcohol-abuse education programs.
- Sexual assault programs to prevent sex offenses, and procedures to follow when a sex offense occurs.

Crime statistics may be accessed on the University Police Web site at **www.uta.edu/police/crimestats.htm.**

Student Travel Policy

Before any student organization travels, it is beneficial to come to the Office of Student Governance and Organizations to receive information about liability and to consider using release forms that are available.

However, if the trip is funded by the University (including Program Assistance Funds), is more than 25 miles from the University, and the vehicle is owned or leased by the University, or if attendance is required by a student organization, then the organization must submit the Student/Group Travel Form and the University Request for Travel Authorization at least 10 days prior to the date of travel. All forms and additional information is available in the Office of Student Governance and Organizations. For additional information, see the UT Arlington Handbook of Operating Procedures, Part II, Subchapter 6-600.

University Authorized Absences

The Office of the Vice President for Student Affairs provides lists of students who have absences authorized by the University (e.g., participation in athletic events or scholastic activities that are officially-sponsored University functions—these are primarily activities that are funded by the University). The student must contact the instructor one week in advance of the excused absence and arrange with the instructor to make up missed work or missed examinations. Instructors will provide those students an opportunity to make up the work or otherwise adjust the grading to ensure that the student is not penalized for the absence. Failure to notify the instructor or failure to comply with the arrangements to make up the work will void the excused absence.

Student Educational Records Policy

Students may have access to their own educational records during regular office hours by contacting the person or the office that maintains these records. A student may appear in person or make a written request for a copy of the record to be mailed. Another person may not see a student's educational records unless the student gives written permission. One exception allows a parent or guardian who is providing one-half or more of the student's financial support to obtain the educational record. Faculty and staff members of the University have access to student educational records in performance of regular duties. If an educational record contains information on more than one student, then a student desiring access may review only parts pertaining to that student.

Students may have official copies of their UT Arlington transcripts mailed to other institutions or may obtain copies for their own use. A student must sign a request form in the Registrar's Office or mail a signed, written request to release the transcript. Transcripts also may be requested through the UT Arlington Web page at **www.uta.edu/transcripts.** Requests will not be accepted by telephone or from persons other than the student without that student's written permission.

The Family Educational Rights and Privacy Act of 1974 provides that a university may release directory-type information about students. The information released may include the following items: the student's name, address, electronic mail, telephone number, date and place of birth, major field of study, participation in officially recognized activities and sports, weight and height if a member of an athletic team, dates of attendance, degrees and awards received, and the last educational institution attended. Each year UT Arlington publishes a student directory that contains the student's name, major field of study and telephone number. The law states that a student has the right to withhold this information from the public and other students. A form requesting the withholding of this information is available in

the Office of Admissions, Records and Registration. Unless this form is completed before the Census Date of the fall semester, this data will be released as public information.

Students have the right to challenge the content of their educational records to ensure that their records are not inaccurate, misleading or in violation of other rights of students. This allows students an opportunity to correct inaccurate or misleading information and permits written explanation concerning the content of the records. Any evidence regarding an inaccurate or misleading record should be presented to the individual in charge of the office where the record is maintained.

For admission, applicants are requested to submit their Social Security number, which serves as the basis for identification of various University records. Usage will vary according to requirements of the office in which the record is located.

A more detailed statement of the records policy is available in the Office of the Senior Vice President for Finance and Administration, Room 300, Davis Hall.

Attendance, Absences and Observance of Religious Holy Days

Attendance

Regular attendance at all class meetings is expected. Instructors are responsible for implementing attendance policy and must notify students of any special attendance requirements. Special regulations of colleges and schools required by the unique nature of their programs of study may be enacted through the normal approval process. These special regulations may not conflict with University regulations on class attendance and absence. An instructor is under no obligation to accommodate students who are absent or miss work without prior notification and make-up arrangements.

Students will be allowed an excused absence under circumstances described below. The student must notify the instructor in writing at least one week in advance of the start of the excused absence and arrange with the instructor to make up missed work or missed examinations. Instructors will allow students an opportunity to make up the work and examinations within a reasonable time period following the absence or otherwise adjust the grading to ensure that the student is not penalized for the absence, provided that the student has properly notified the instructor.

Instructors are under no obligation to accommodate students who are absent or miss work without prior notification and make-up arrangements. Students who have properly notified the instructor, will not be penalized for the absence. However, the instructor may respond appropriately if the student fails to complete the assignment or examination satisfactorily within the time limit following the absence set by prior arrangement.

If there is disagreement between student and faculty member regarding what constitutes a reasonable amount of time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the Office of the Provost. The decision of the Provost is final.

Excused Absences

University Authorized Absences

The Office of the Vice President for Student Affairs provides lists of students who have absences authorized by the University (e.g., participation in athletic events or scholastic activities that are officially sponsored University functions—those are primarily activities that are funded by the University).

Absence for Military Service

In accordance with section 51.9111 of Texas Education Code, a student is excused for attending classes or engaging in other required activities, including examinations, if he or she is called to active military service of reasonably brief duration. The student will be allowed a reasonable amount of time after the absence to complete assignments and take examinations.

Observance of Religious Holy Days

A student who misses an examination, work assignment or other project because of an observance of a religious holy day will be given the opportunity to complete the work missed within a reasonable time after the absence.

A "religious holy day" means a holy day by a religion whose places of worship are exempt from property taxation under Section 11.20 of the Tax Code. The period of the excused absence will include time for any travel needed to fulfill that religious obligation. If the instructor and the student disagree about whether an absence constitutes a "religious holy day" as defined above, either the student or the instructor may request a ruling from the Office of the Provost. The decision of the Provost is final.

Administration of the Advanced Degree Programs

Committees on Graduate Studies

Each graduate program is governed by a Committee on Graduate Studies. The committee is composed of all full members of the graduate faculty in that program. Graduate faculty from allied fields may serve on the committee, when appropriate. In an interdepartmental program, the Committee on Graduate Studies is appointed by the Dean of Graduate Studies.

Graduate Advisors

Each graduate program has a Graduate Advisor. The Graduate Advisor represents the Dean of Graduate Studies and the Committee on Graduate Studies in matters pertaining to advising graduate students in their academic areas. The Graduate Advisor's functions include clearing of students for registration, acting upon requests for drops, adds, section changes and special examinations; keeping graduate student records; and advising graduate students about their degree plans. The name, office location and telephone number of each Graduate Advisor is listed at the beginning of each departmental or program description in this catalog.

Grades

Types of grades that may be assigned in courses at the University of Texas at Arlington (Valid Grades) consist of A, B, C, D, F, P, I, R, and W. Instructors may only assign those grades listed on the Grade Roster for a given course. Students uncertain about the grading policy in a course should consult their instructor at the beginning of the semester for information. Valid Grades for independent study, conference, seminar and readings courses vary widely among departments; therefore, a statement on Valid Grades and special grading policies, if any, is given at the beginning of the course descriptions for each program in this catalog.

Grades of I, R and W

Grade of I: The grade of I designates the grade of incomplete. A graduate student unable to complete all assigned work in a class in the semester in which it was taken may, at the discretion of the instructor, receive an I grade. This grade is not given automatically when a student does not complete all assigned work. It is the responsibility of the student to make arrangements with the instructor to secure an I grade before the semester ends. The grade of I will remain as part of the student's academic record until the work is completed and a final grade awarded. To receive credit for the final grade the instructor must submit a change of grade form. A grade of I does not carry credit value. This grade is not awarded in research, internship, thesis or dissertation courses.

Grade of R: The grade of R designates the grade of research in progress and is given only in research, internship, thesis or dissertation courses. A graduate student unable to complete assignments in one of these courses may, at the discretion of the instructor, receive an R grade. The R grade is a permanent grade and does not carry credit value. To receive academic credit in an R-graded course, a student must re-register for and successfully complete the course earning a valid passing grade for the course. In other words, a student may receive academic credit for passing an R-graded course only if the work is completed within a semester in which he or she is enrolled in the course. Grading policy in some courses may change during the period covered by this catalog. Grading policy for each course each semester is printed on the instructor's class roll. Students should verify the grading policy with the instructor at the beginning of each semester.

Grade of W: A grade of W may be assigned if a student chooses to withdraw from a class after Census date, but prior to the last date to drop posted in the University's Academic Calendar. However, the grade of W is not automatically awarded. Graduate Students must consult with their Graduate Advisor before withdrawing from a class. Further, the student must secure the permission of the instructor and be passing the course (have a grade of A, B, C or P); at the time they intend to withdraw to receive a grade of W.

N Designation

If an instructor assigns a grade that does not correspond to one of the Valid Grades for a course, the student's grade report from the Registrar will show a designation of N, meaning that no valid grade was received from the instructor. Because N grades are automatically converted to F at the end of the 12th week of class of the next regular semester, a student receiving an N designation on a grade report should contact the instructor immediately and request that a change from N to a Valid Grade be initiated.

Grades awarded in research or internship courses (P, R, F or W)

Students enrolled in most research or internship courses will receive a pass (P) when the project or internship is completed, or a grade of research in progress (R), fail (F) or withdrawn (W).

Grades awarded in three-hour thesis and three- and six-hour dissertation courses (R, F or W)

The only grades awarded in these courses are research in progress (R), fail (F) or withdrawn (W).

Grades awarded in six-hour thesis and nine-hour dissertation courses (P, R, F or W)

The grades pass (P), research in progress (R), fail (F) and withdrawn (W) may be awarded in these courses. The grade of P can be awarded when the thesis or dissertation is defended successfully. Accordingly, a student must be enrolled in a six-hour thesis course or a nine-hour dissertation course the semester in which the thesis or dissertation is defended. Students typically enroll in these courses, defend and apply for graduation in the same semester.

Credit Toward Degrees and Certificates

Only courses completed with a grade of A, B, C, or P can satisfy graduate degree or certificate requirements. However, courses in which grades of D or F are earned will affect a student's grade-point average. A student must have a B (3.0) grade-point average in courses included in their degree plan and a B (3.0) average in all work undertaken as a graduate student to have credits applied toward a graduate degree or certificate.

Credit for Repeated Courses

A student may repeat a course only if that course is specifically designated in this catalog as one that can be repeated for credit. A student who fails to receive credit (earns a grade of D or F) may repeat the course in order to obtain credit, in which case the grades for both attempts will count in computing the student's overall grade-point average. No student will be allowed to repeat a course in order to change a passing grade of C or higher.

Course Credit Applied to More Than One Degree

No course that has been applied to any one degree, at any graduate or undergraduate institution, may be applied to any other degree, either directly or by substitution except in approved dual degree or approved fast track programs. The amount of shared credit between degrees in dual degree programs is limited and varies with the total number of hours needed to complete both degrees. See Dual Degree Programs in the Advanced Degrees and Requirements section of this Catalog for details. Similarly, the amount of credit that can be shared in fast track programs is also limited. Details may be found in descriptions provided by participating programs elsewhere in this Catalog.

Credit for Advanced Undergraduate Coursework

Up to nine hours of advanced undergraduate credit from UT Arlington or another institution may be applied to a master's degree program if the hours have not been used to earn a previous degree and have the approval of the appropriate Graduate Studies Committee and the Dean of Graduate Studies. Approved fast track programs may allow dual credit.

Transfer Credit and Course Waivers

Transfer Credit Applied to Master's Degrees

Equivalent coursework completed at other institutions of recognized standing may be transferred to a master's degree program after evaluation and approval. Transfer courses do not appear on a student's UT Arlington transcript and transfer course grades are not included in calculating a student's UT Arlington graduate grade-point average.

No more than nine hours of transfer credit will be granted except in the professional master's programs that require more than 36 hours of coursework. In such programs, the number of transfer hours is limited to 25 percent of the total program hours. This rule does not invalidate written agreements between graduate programs and the Graduate School or agreements that are stated elsewhere in this catalog. Transfer credit will be accepted only for organized courses in which the student received a letter grade of B or higher and an official transcript showing the course(s) and grade(s) is required.

Courses from other universities taken after a student has been admitted into a master's program at UT Arlington must be approved in advance by the appropriate Committee on Graduate Studies and the Dean of Graduate Studies. All work submitted for transfer credit must have been completed no more than six years before completion of a graduate program at the University of Texas at Arlington.

To request transfer credit, students must complete the Transfer of Graduate Credit form and obtain approvals from the appropriate graduate advisor and chair of the Committee on Graduate Studies and final approval from the Graduate Dean. The form is available online at the Graduate School web site through the Virtual Graduate Advisor link.

Credit Toward Doctoral Degrees

Transfer work is not accepted in doctoral programs. However, formal graduate-level coursework completed in the student's major area of doctoral study at other institutions granting doctoral degrees in the student's major may serve to establish the student's competency in those subject areas and may provide a basis for waiving some UT Arlington course requirements. Such waivers must be shown on the Academic Plan, recommended by the student's advisory committee, and approved by the Committee on Graduate Studies of the student's major and by the Dean of Graduate Studies.

Transfer Credit Applied to Graduate Certificates

Equivalent coursework completed at other institutions of recognized standing may be transferred to a graduate certificate program after evaluation and approval of the graduate advisor, the appropriate Committee on Graduate Studies and the Dean of Graduate Studies. The number of transfer units is limited to 50% of the total units required for the certificate, except in certificate programs that exceed 15 units, in which case 12 of those units must be taken in residence. This rule does not invalidate written agreements between graduate certificate programs and the Graduate School or agreements that are stated elsewhere in this catalog. Transfer credit will be accepted only for organized courses in which the student received a letter grade of B or higher and an official transcript showing the course(s) and grade(s) is required.

Courses from other universities taken after a student has been admitted into a graduate certificate program at UT Arlington must be approved in advance by the graduate advisor, the appropriate Committee on Graduate Studies and the Dean of Graduate Studies. The transfer credit request form is available online through Virtual Graduate Advisor.

Transfer courses do not appear on a student's UT Arlington transcript and transfer course grades are not included in calculating a student's UT Arlington graduate grade-point average.

Earning Graduate Course Credit as a UT Arlington Undergraduate Student

Courses taken in undergraduate status may not be applied directly to a doctoral program.

Some departments and colleges (i.e., the College of Business Administration) do not permit students to enroll in graduate courses unless they have been admitted to Graduate School. Others allow students enrolled as undergraduates to take a limited amount of graduate coursework under the conditions described below.

All undergraduate students should consult with the appropriate Graduate Advisor before attempting to register for graduate courses.

Advanced UT Arlington Undergraduates (Current Seniors)

An undergraduate student at the University of Texas at Arlington may not use graduate courses (numbered 5000 and above) to fulfill undergraduate degree requirements except as part of an approved fast track program. However, an undergraduate needing no more than 12 hours in one semester (six semester hours in one summer session) to complete all the requirements for a bachelor's degree may register for graduate courses and apply them toward a master's degree at UT Arlington under the following conditions:

1. In no case may a student previously dismissed from or denied admission to the Graduate School enroll in graduate courses or reserve courses for graduate credit.
2. All work for undergraduate credit must be completed during that semester or summer session in which the student enrolls in graduate courses.
3. Total registration for all work may not exceed 15 semester hours in a semester (or 12 semester hours in the summer sessions).
4. The student must submit to the Graduate Advisor a "Reservation of Courses for Graduate Credit by Undergraduate Students" form (available from Graduate Advisors). The reservation must be approved by the Graduate Advisor and the Dean of Graduate Studies, and the Registrar must certify that the reserved credit will not be applied to the student's undergraduate degree requirements. This form must be submitted in accordance with the deadlines printed in the Graduate School calendars in this catalog.
5. The student must have at least a 3.0 undergraduate GPA to be eligible to enroll in a graduate course and to reserve it for graduate degree credit.
6. Courses taken at UT Arlington and reserved for graduate credit may be applied to a master's degree program only if a grade of A, B, C, or P was earned.
7. Credit is officially accepted for application to a graduate program when a student is unconditionally admitted to the Graduate School.
8. A maximum of 12 semester hours of graduate level courses may be reserved.

Students Holding Bachelor or Higher Degrees Enrolled as Degreed Undergraduates

Students who have completed their undergraduate studies and have been awarded their bachelor's degree may enroll as degreed undergraduates in graduate-level course work and receive graduate credit at UT Arlington under the following conditions:

1. Courses taken at UT Arlington and reserved for graduate credit may be applied to a master's degree program only if a grade of A, B, C, or P was earned.
2. No more than 12 semester hours of credit earned while a degreed undergraduate may be applied for credit toward a

master's degree. Students must file a request, approved by the Graduate Advisor, the Committee on Graduate Studies, and the Dean of Graduate Studies to apply such credits toward a graduate degree. The request form is available online through the Virtual Graduate School Advisor link located on the Graduate School Web site.

3. All courses that are applied to a master's degree must have been completed no more than five years before enrollment in a graduate program at UT Arlington. If the student has completed more than 12 semester hours of graduate courses in undergraduate status, only graduate courses completed within five years of enrollment in a graduate program at UT Arlington will become part of the graduate record and considered in computing the student's grade-point average.
4. A student may elect to apply all graduate courses completed in the last five years toward their degree or to apply none of this work. Selective application of courses is not permitted. If any courses are applied for credit toward a master's degree, all courses completed within the last five years will become part of the graduate record.

Graduate Credit for Extension Classes

Work done in extension classes may be applied toward an advanced degree under the same conditions that apply to transfer work, except that credit for extension work is limited to six credit hours.

Courses That Do Not Provide Graduate Credit

Personal Improvement Courses

Personal improvement individual or group music or art lessons and exercise and sports activities courses can not be used for the following: 1) to satisfy graduate degree requirements; 2) meet Graduate School enrollment requirements; 3) in computation of graduate grade-point averages or determination of academic probation or academic good standing in Graduate School; 4) in calculation of grade-point averages for the purpose of admission to a Graduate Program or for certification for graduation from a Graduate Program.

Audited Classes

University credit is not granted for audited classes and audited classes will not satisfy enrollment requirements.

Correspondence Courses

Correspondence courses are not accepted for graduate credit.

Credit by Examination

Credit by examination may not be used for graduate credit and no such credit, graduate or undergraduate may appear on graduate student transcripts.

Academic Standing

Good Standing and Satisfactory Scholastic Progress

Graduate students are considered to be in good academic standing and making satisfactory progress in a degree or certificate program if they 1) meet all admission conditions within the time required 2) have a B (3.0) or better grade-point average on all coursework undertaken while in Graduate School and 3) have a B (3.0) or better grade-point average in courses needed to satisfy degree requirements by the end of the semester in which they intend to graduate. Students must be in good academic standing by the end of their final semester in order to receive an advanced degree or certificate from UT Arlington. Refer to the section "Courses Not Providing Graduate Credit" for an explanation of courses that do not provide graduate credit and will not be used to determine academic standing or to satisfy degree requirements.

Academic Probation

A graduate student whose cumulative grade point average falls below a 3.00 in all graduate courses, be they graduate or undergraduate level, taken while enrolled as a UT Arlington graduate student will be placed on academic probation. The student must attain a grade point average of at least 3.00 in the next semester he or she is enrolled or be subject to dismissal. Undergraduate courses or graduate courses graded P, R, I or W or courses that do not provide graduate credit (see Courses Not Providing Graduate Credit) cannot be used to remove the condition of academic probation.

Dismissal

Students have the initial responsibility to recognize when they are having academic difficulties and are expected to initiate steps to resolve the problem. When a student is in academic difficulty, and dependent upon the severity of the problem, the student may receive an oral warning and/or written statement of the problem and required corrective actions from his or her program. Failure to take these corrective actions can result in termination from the degree program.

A student who has been dismissed from the Graduate School for failure to remove the condition of academic probation by meeting the 3.0 grade-point average requirement may be readmitted for further graduate study in the same or in a different program only if a Petition to the Graduate Faculty has been approved by the appropriate Committee on Graduate Studies and the Dean of Graduate Studies.

A student can be dismissed from a degree program not only for failure to maintain an adequate grade point average, but also for such reasons as unsatisfactory progress toward a degree as defined by the department or program, inability to pass a comprehensive examination, failure to prepare or to defend a thesis or dissertation in a satisfactory manner or complete thesis or dissertation work in an acceptable amount of time. Termination due to inadequate academic progress is a decision made by the program's or department's Graduate Advisor and Graduate Studies Committee. A student's thesis/dissertation committee may recommend termination for failure to prepare a thesis/dissertation proposal, prospectus or final draft in a satisfactory manner or failure to complete work in an acceptable amount of time to the program's Graduate Advisor and Graduate Studies Committee. Such decisions to terminate a student must be communicated to the Dean of Graduate Studies by the Chairman of the Graduate Studies Committee with required justification. The Graduate Dean will review the case make the final decision. The student may continue enrollment until the Dean finalizes the termination decision.

Students failing to pass a comprehensive examination or thesis/dissertation defense may be terminated upon the recommendation of the examining committee. Such decisions are indicated on the Comprehensive Examination Report or Final Defense Report which are

returned to the Dean of Graduate Studies. The Graduate Dean will notify the student formally of the program's or department's decision.

Grievances

Grievances Related to Grades

It is the obligation of the student, in attempting to resolve any student grievance regarding grades, first to make a serious effort to resolve the matter with the instructor with whom the grievance originated. Individual instructors retain primary responsibility for assigning grades. The instructor's judgment is final unless compelling evidence shows preferential treatment or procedural irregularities. If students wish to appeal, their requests must be submitted in writing on an Academic Grievance Form available in departmental or program offices to the department chair or program director. Before considering a grievance, the department chair or program director will refer the issue to a departmental or program committee of graduate faculty. If the committee cannot reach a decision acceptable to the parties involved, the department chair or program director will issue a decision on the grievance. If students are dissatisfied with the chair or director's decision, they may appeal the case to the academic dean. If they are dissatisfied with the academic dean's decision, they may appeal it to the Dean of Graduate Studies. Students have one year from the day grades are posted to initiate a grievance concerning a grade. (For grievances other than those related to grades, see the catalog entry titled Grievances Other Than Grades.)

Grievances Other Than Grades

In attempting to resolve graduate student grievances, the student must first make a serious effort to resolve the matter with the individual with whom the grievance originated. Grievances involving matters other than grades are appealed to the department chair or office director, then to the Dean of Graduate Studies (except in personnel matters, in which cases the appeal is to the Provost unless questions regarding a graduate assistant or graduate associate are involved), Vice President for Business Affairs, or Vice President for Undergraduate Academic and Student Affairs, as determined by the nature of the grievance. If the matter remains unresolved at this level, the student may appeal to the Provost. The decision of the Provost is final. (For grievances involving grades, see the catalog entry titled Grievances Related to Grades.)

Grievances Related to Discrimination or Sexual Harassment

Grievances alleging discrimination or sexual harassment committed by faculty, staff or students should be referred to the Office of Equal Opportunity and Affirmative Action for investigation. Their Web site provides information on what constitutes discrimination or harassment and what steps students, faculty and staff may follow to address such situations and receive protection under University policy and State and Federal law.

Registration and Enrollment Requirements

To attend The University of Texas at Arlington any given semester, a student must register and pay fees. All registration at UT Arlington may be done over the Web at **www.uta.edu/registrar**. The current semester's Schedule of Classes gives the exact dates and times for registration and should be consulted each semester, not only for registration information but advising instructions as well. The Spring Schedule of Classes is available in mid-October; the Summer/Fall Schedule of Classes is available in mid-March. New students, most readmitted former students and continuing students in certain majors must be advised. If advising is required, it must be done prior to registration.

Scheduling Classes

All students must register to enroll in and attend classes. Students who are no longer eligible for enrollment at the start of the semester will have their registration canceled and their tuition and fees refunded.

Payment of Fees

Refer to the Tuition, Fees, and Charges section of this catalog for registration billing and payment or access **www.uta.edu/fees**.

Late Registration

Late registration is held each semester for students who are unable to register on their regular dates. Late registration takes place on the Web. Students should try to register on their earliest date since classes close during late registration and a late fee is added.

Registration and Orientation Requirements for International Students

Orientation

All new international graduate students must attend an orientation at the beginning of their initial semester at The University of Texas at Arlington. Those who do not attend the International Student Orientation before registration will not be allowed to register during the regular registration period and must attend a makeup orientation on the morning of the first class day, before registering and being assessed a late fee. For more information please contact the Office of International Education at 817.272.2355.

Required Insurance

International graduate students are required to purchase The University of Texas at Arlington Student Health Insurance Plan. After the initial semester of enrollment, the insurance premium will be added automatically to the student's fees. If the student has health insurance coverage through 1) an employer of the student, spouse, or parents, or 2) U.S. or home-country government sponsorship, the student Health Insurance Plan may be waived. For outside insurance to qualify for the waiver, the coverage must include repatriation and medical evacuation benefits. If it does not cover repatriation and medical evacuation, and most U.S. policies will not, a supplemental policy must be purchased for that coverage. Students who wish to apply for the waiver must come to the Office of International Education prior to registration to show proof of outside coverage and documentation in English describing benefits provided by the non-UT Arlington insurance plan. For more information please contact the Office of International Education at 817.272.2355.

Required Tuberculosis Screening

All new Non-U.S. Citizen/Non-Permanent Resident and Intensive English students must meet the following requirements in order to enroll in classes and remain enrolled in the University.

1. Upon arrival at the University, each prospective student must have a Tuberculosis screening and/or chest x-ray in order to enroll. These may be obtained from the UT Arlington Health Services.
2. Those tested must return to UT Arlington Health Services to have the test read between 48 and 72 hours after administration (if not read within this time frame, the student must wait 10 days and then be re-tested). If the TB test is positive, the student must have a chest x-ray performed and the results received at UT Arlington Health Services within a 25-class-day time limit.
3. The testing or chest x-ray must be performed even if the student was immunized with BCG (a vaccine for TB).

If the testing process and subsequent diagnostic exam are not completed and submitted to the UT Arlington Health Services by the 25th class day, the student will be dropped from classes and barred from reinstatement.

For more information, please call Health Services Immunization Clinic at 817.272.7143.

Course Load (Credit Hour) Requirements

Continuous Enrollment Policy

Graduate students must enroll in at least one credit hour of work related to their degree each long semester- Fall and Spring -in order to remain classified as an enrolled student. Some programs may specify a higher minimum enrollment requirement in their Handbook for Graduate Students or other published documents. Enrollment in Summer Sessions is not required, and students who do not enroll in summer will not be considered in violation of the continuous enrollment policy. The minimum enrollment requirements for holding graduate assistantships or fellowships or the requirements of the enrollment requirements of other programs, offices and agencies such as the Veterans Administration. U.S. Citizenship and Immigration Services, and federal financial aid and certain loan programs, must be met. It is the student's responsibility to determine the enrollment requirements of such entities.

All International Students

International students must be enrolled for a minimum of 9 semester hours during each regular semester (Fall and Spring).

Full-time Enrollment and Maximum Hours

Full-time students are expected to enroll in at least 9 hours in a regular semester. The minimum full-time course load during the summer sessions is 6 hours. The maximum course load for full-time graduate students is 15 semester hours in a regular semester and 12 hours in a summer session. Registration in excess of these limits in exceptional circumstances must be approved by the student's Graduate Advisor.

Required Enrollment for Teaching and Research Assistants

Students receiving graduate teaching or research assistantships must meet enrollment requirements during the semester in which they are supported. Assistants should complete no more than 12 semester hours and no fewer than 9 semester hours per semester. They may register for no fewer than 6 semester hours during the summer sessions. See the section titled Graduate Assistantship/Associateship Policy for exceptions to these rules and other details on enrollment and other requirements that Assistants and Associates must meet.

Required Enrollment for Students Receiving Financial Aid

To qualify for most forms of financial aid administered through the Office of Financial Aid, students must enroll in and complete a certain number of credit hours each semester to meet the Satisfactory Academic Progress requirements to receive future financial aid. Students enrolling in 9 or more credit hours at Census Date must complete at least 6 of these hours whereas students enrolling in 6-8 credits hours at Census Date must complete 4 hours to qualify for financial aid. Students enrolling in 5 hours must complete 3 hours. If a student does not complete the required minimum number of hours, they will lose eligibility for aid in the next academic year of enrollment. Students enrolling in fewer than 5 hours at Census do not meet the enrollment requirements for financial aid. The Satisfactory Academic Progress policy may be found at **www.uta.edu/fao.** Contact the Office of Financial Aid for additional information and guidance on enrollment and eligibility requirements.

Adding, Dropping and Auditing Courses

Adding and Dropping Courses

Graduate students who wish to change a schedule by either dropping or adding a course must first consult with their Graduate Advisor. Regulations pertaining to adding or dropping courses are described below. Adds and drops may be made through late registration either on the Web at MyMav or in person through the student's academic department. Drops may occur until a point in time two-thirds of the way through the semester, session, or term. The last day to drop a course is listed in the Academic Calendar available at **http://www.uta.edu/uta/acadcal**.

1. A student may not add a course after the end of late registration.
2. A student dropping a graduate course after the Census Date but on or before the drop date has passed may with the agreement of the instructor, receive a grade of W but only if passing the course with a C or better average. A grade of W will not be given if the student does not have at least a C average. In such instances, the student will receive a grade of F if he or she withdraws from the class.
3. A student desiring to drop all courses in which he or she is enrolled is reminded that such action constitutes withdrawal (resignation) from the University. The student must indicate intention to withdraw and drop all courses by filing a resignation form in the Office of the Registrar or by Web at **www.uta.edu/registrar**.
4. In most cases, a student may not drop a graduate course or withdraw (resign) from the University after the 12th week of class. Under extreme circumstances, the Dean of Graduate Studies may consider a Petition to Withdraw (resign) from the University after the 12th week of class, but in no case may a graduate student selectively drop a course after the 12th week and remain enrolled in any other course. Students should use the special Petition to Withdraw for this purpose. See the section titled Withdrawal (Resignation) from the University for additional information concerning withdrawal.

Auditing Courses

Any person who has credit in a particular course or who has a demonstrated need for the course content may be eligible for auditing that course if space is available. An auditor has the privilege of hearing and observing only; no University credit is granted for auditing. Audit applications may be secured from the Registrar's Office.

A student may audit a graduate course only with permission of the instructor and approval of the Registrar. When the form has been completed and approved, the applicant, if currently enrolled, pays $20 per course at Bursar Services; if not enrolled, the applicant pays $100 per course. An academic department may place restrictions on the privilege of auditing or may deny permission to audit. Audited courses will not meet Graduate School enrollment requirements.

Leave of Absence Policy

A student may apply for a Leave of Absence in order to respond to exceptional circumstances that will prevent him or her from meeting the continuous enrollment requirement. A Leave of Absence will be granted only for good cause, such as health-related issues, major financial or employment issues, pregnancy, childbirth, child care, elder care or other significant family concerns, or other major personal circumstances that interfere with a student's ability to undertake graduate study. Leaves are granted for up to two long semesters. Students returning from leave as scheduled will be automatically readmitted and will not be required to submit an application or pay an admission fee. Students who do not return at the end of their approved Leave of Absence must reapply for admission by published application deadlines, pay all relevant evaluation fees, and are not assured of readmission to the University. During the time of the leave of absence, the student may not use University facilities or resources, receive an assistantship or fellowship, or continue academic work with the faculty. Time taken on an approval Leave of Absence will not count against degree completion time limits.

An approved Leave of Absence does not exempt students from the enrollment requirements of other programs, offices and agencies such as the veterans Administration, Immigration and Naturalization Service, and federal financial aid and certain load programs. It is the student's responsibility to determine what effect a Leave of Absence will have on his or her status with such entities. For example, International students approved for a Leave of Absence must inform the Office of International Education so that requirements of the Immigration and Naturalization Service can be addressed.

A student requesting leave should complete the Leave of Absence Request form, available via the Virtual Graduate Advisor and obtain the approval of his or her Graduate Advisor who will forward the request on the Dean of Graduate Studies for final review and approval. Requests may be delivered to the Dean of Graduate Studies before or be received by the Dean of Graduate no later than mid-semester in the semester in which the leave is to begin.

Leave of Absence will not be granted retroactively for a semester after the mid-semester point has passed. Students who miss this deadline must apply for readmission.

Withdrawal (Resignation) from the University

A student who wishes to withdraw (resign) voluntarily from the University may do so by withdrawing from all graduate and undergraduate classes prior until the point of time corresponding to two-thirds of the duration of the semester or term. The exact date of the deadline is provided in the Academic Calendar available at **http://www.uta.edu/uta/acadcal**. After this deadline has passed, a graduate student or undergraduate student enrolled in a graduate course is not permitted to withdraw or to selectively drop courses. In exceptional cases, however, a graduate student may request to withdraw after the deadline by obtaining a Petition to Withdraw form and submitting it to the Dean of Graduate Studies. (Students should use the special Petition to Withdraw for this purpose and not the Petition form used for other types of requests.) If the petition is not approved, the student remains responsible for all coursework requirements. Therefore, students should not discontinue class attendance or course assignments unless they have been notified in writing that the Dean of Graduate Studies has approved the petition to withdraw. A Petition to Withdraw form is available online through the Virtual Graduate School Advisor or in the Graduate School office.

Withdrawal as a Result of Military Service

A student who withdraws as a result of military service is to receive the following considerations according to Section 54.006 of the Texas Education Code: (1) receive a refund of tuition and fees (2) if eligible, be assigned a grade of incomplete (I) or (3) as determined by the instructor, receive a final grade or credit in courses where the student has satisfactorily completed a substantial amount of coursework and has demonstrated sufficient mastery of the course material.

Change of Graduate Major, Program or Degree Level

Students wishing to change graduate major, program or degree level (master's or doctoral classification) from the one in which they are enrolled currently or in which they were enrolled during their most recent semester at UT Arlington must initiate the change by completing the "Request for Change of Graduate Program or Degree Level" form. Students may submit only one "Request for Change of Graduate Program or Degree Level" form at a time. Additional forms will not be processed until a final decision on any prior requests have been made. Students intending to change majors should consult the Graduate Advisor of the new program regarding program admission and degree requirements before completing this form. Similarly, students wishing to change degree level should submit the request after discussing the matter with the appropriate graduate advisor.

Students wishing to change from one program to a dual degree program must complete the "Request for Change of Graduate Program or Degree Level" form and mark the box stating "Request to Change to Dual Degree Program (master's level only).

Students wishing to change from a dual degree program to a single degree program must complete the "Request For Change of Graduate Program or Degree Level" form and mark the box stating "Request to Change to New Graduate Program."

Students wishing to change from Doctoral to Master's degree level for conferral of the master's degree must complete the "Request for Change of Graduate Program or Degree Level" form and mark the box stating "Request to change form PhD to Masters status (for conferral of the master's degree)." Students will remain in mater's status until award of the master's degree. Upon award of the master's degree students will be automatically changed back to doctoral status.

The "Request For Change of Graduate Program or Degree level' form can be found at our Web site **https://grad.uta.edu** by selecting the Virtual Graduate School Advisor link or by request from the Graduate School Office.

Admission Requirements and Procedures

This catalog is a general information publication only. It is not intended to nor does it contain all regulations that relate to students. The provisions of this catalog do not constitute a contract, express or implied, between any applicant, student or faculty member and The University of Texas at Arlington Graduate School or The University of Texas System. The University reserves the right to withdraw courses at any time, change fees, rules, calendar, curriculum, degree programs, degree requirements, graduation procedures and any other requirements affecting students. Changes will become effective whenever the proper authorities so determine and will apply to both prospective students and those already enrolled. Students are held individually responsible for complying with all requirements of the rules and regulations of the University and the Board of Regents of The University of Texas System. Failure to read and comply with policies, regulations and procedures will not exempt a student from whatever penalties the student may incur.

Admission

The admission requirements set forth in the following pages are the minimum standards required for admission to the Graduate School. Meeting them does not guarantee acceptance into a departmental degree program because most departments have more stringent admission standards.

The admission policies of the Graduate School and the academic departments of The University of Texas at Arlington comply with standards specified by the Texas Education Code, Section 51.842. Specifically, performance on a standardized test is not the sole criterion for consideration of an applicant for admission or competitive scholarships or as quality of an applicant's academic preparation. Relevant experience, commitment to the field of planned study, multilingual proficiency, and socioeconomic background (to the extent that it can be identified) may also enter into these decisions. This law does not apply to standardized tests used to measure the English language proficiency of non-native English speakers without a bachelor's or master's degree from a regionally accredited U.S. institution.

Basic Admission Requirements

The Graduate School requires that basic admission requirements be met before a student can be accepted. In meeting these requirements, an applicant 1) must have a bachelor's degree from a regionally accredited U.S. college or university or its foreign equivalent, with a satisfactory grade-point average; 2) must have an acceptable and current score on the aptitude tests of the Graduate Record Examination or the Graduate Management Admission Test, as specified by the department or program to which application is being made; 3) demonstrate potential for graduate work in the chosen field through previous academic performance; and 4) be approved for admission by the department in which a degree is sought. Many departments have additional requirements that concern such things as a person's work or other experience and skills. Some programs require a criminal background check as a condition of admission or program completion or licensure expectations concerning acceptable qualifications. Applicants should examine departmental requirements with care.

Application

Application for admission must be made on official application forms. Students may complete our application online, download an application package and apply by submitting a paper application or obtain an application package by contacting the Graduate School Office, Room 333, Davis Hall. Online access to application materials and other helpful information for applicants can be found at our Web site **https://grad.uta.edu** by selecting the Virtual Graduate Admissions Counselor link.

Application Evaluation Charges

A non-refundable application evaluation charge is required of all applicants. Payment must be received before processing can begin. There are no exceptions to this policy.

A non-refundable evaluation charge of $40 is required of all U.S. citizens and U.S. Resident Alien applicants who have completed all of their college or university work at institutions located in the United States. A $70 evaluation charge is required of all U.S. citizens and U.S. Resident Alien applicants who have completed some or all undergraduate or graduate coursework at an institution located outside of the United States.

All international students are required to pay a non-refundable $70 application evaluation charge.

Application Documentation Requirements: Required Official Transcripts, Marksheets, Diplomas and Standardized Tests

Graduate School application processing requires receipt of official U.S. transcripts or foreign country transcripts or marksheets and diplomas. Unattested, notarized or fax copies of U.S. transcripts, foreign country transcripts, marksheets, diplomas, test scores and other academic records are not acceptable for processing purposes. Acceptable transcripts, marksheets and diplomas from U.S. and international institutions are described below. Documents meeting the indicated criteria will be accepted by the Graduate School for admission purposes. Unacceptable documents will prevent or cause delays in admission processing.

U.S. Transcript Criteria

Official transcripts from U.S. institutions are those mailed directly to the Graduate School by the Registrar or responsible head of the institution at which the work was attempted or completed. An official original "issued to student" transcript on safety paper with the official university seal and signature of the university's Registrar may, upon Graduate School review, be acceptable. One, but preferably two, transcripts are requested. Currently or previously enrolled UT Arlington students do not have to request UT Arlington transcripts be forwarded by the UT Arlington Registrar to the Graduate School.

Foreign Country Transcripts or Marksheets and Diplomas Criteria

Official foreign country transcripts or marksheets and diplomas are those bearing the original seal of the institution and the original sig-

nature of the Registrar or responsible head of the institution. Those not issued in English must be accompanied by an exact word for word original English translation bearing the original university or translation agency attestation. One, but preferably two, transcripts or marksheets and diplomas are requested. They may be sent directly to the Graduate School by the institution or by the applicant.

Standardized Test Score Reports

Official test score reports for the Graduate Record Exam (GRE), Test of English as a Foreign Language (TOEFL), TOEFL iBT, and Test of Spoken English (TSE) are issued by the Educational Testing Service (ETS) and sent by ETS directly to the Graduate School. Official test score reports for the Graduate Management Admission Test (GMAT) are issued by the Graduate Management Admission Council (GMAC) and sent by GMAC directly to the Graduate School. Current information about GRE, TOEFL, TOEFL iBT and TSE test dates, locations, registration procedures, and time frames for test score validity is published by ETS at **www.ets.org**. For current information about the GMAT including test dates, locations, registration procedures, and time frames for test score validity, access **www.mba.com**. Official test scores for the International English Language Testing System (IELTS) are reported on an IELTS issued Test Report Form (TRF) and sent directly to the Graduate School from IELTS. Current information about IELTS test dates, locations and registration procedures is published by IELTS at **www.ielts.org**.

Official GRE and GMAT test scores more than five years old and TOEFL test scores more than two years old are not released by ETS; therefore, an applicant who has taken the GRE or GMAT test five or more years ago or the TOEFL test two or more years ago must retake it.

The Graduate School sets test score minimums for tests that measure English proficiency such as the TOEFL, TOEFL iBT, TSE and IELTS; however, individual departments and programs may impose a more stringent test score requirement. Individual departments and programs may evaluate GRE or GMAT scores as one of several criteria to determine admissibility. Test scores do not constitute the sole or primary basis for ending consideration of an applicant. Applicants should refer to individual departmental or program section for test requirements.

TOEFL, TSE, TOEFL iBT and IELTS Test Score Minimums

An applicant whose native language is not English must demonstrate a sufficient level of skill with the English language to assure success in graduate studies. Applicants must submit a score of at least 550 on the paper-based TOEFL, a score of at least 213 on the computer-based TOEFL, a minimum score of 40 on the TSE, a minimum score of 6.5 on the IELTS, or a minimum TOEFL iBT total score of 79 with sectional scores that meet or exceed 22 for the writing section, 21 for the speaking section, 20 for the reading section, and 16 for the listening section to meet this requirement. An applicant holding either a bachelor's or a master's degree from a regionally accredited U.S. college or university is not required to submit a TOEFL, TOEFL iBT, TSE or IELTS score for admission purposes. Any other waivers of the score requirements must be recommended by the applicant's Graduate Advisor and approved by the Dean of Graduate Studies.

TOEFL iBT, TSE or IELTS Requirements for Graduate Teaching Assistants

Before being appointed to an assistantship at UT Arlington, a student whose native language is not English must demonstrate acceptable skill with spoken English. An applicant who is a non-native speaker of English must submit a TSE score of at least 45, or a score on the Speaking section of the TOEFL iBT of at least 23 or a score of at least 7 on the Speaking section of the IELTS to meet this requirement. Only official scores provided directly to UT Arlington by ETS or IELTS are acceptable. Alternatively, students who have not taken the TSE, or who have failed to attain a score of 23 on the Speaking section of the TOEFL iBT or a score of 7 on the Speaking section of the IELTS, may satisfy this requirement by earning a score of at least 45 on the Spoken English Assessment (SEA) examination administered by the University of Texas at Arlington's Assessment Services Office. The Spoken English Assessment (SEA) examination is administered through the Assessment Services Office on the UT Arlington campus at various times during the year. Contact the Assessment Services Office for administration dates and other details of the SEA test, **www.uta.edu/testing**.

Developmental English Program

Students who do not achieve scores on the TOEFL iBT, TSE, IELTS or SEA high enough to satisfy the English proficiency requirements for graduate teaching assistants must enroll in the Developmental English Program and be certified for English proficiency. This 10-week program offered by the UT Arlington English Language Institute emphasizes accent reduction and oral presentation skills needed by teaching assistants. Contact the English Language Institute at 817.272.2730 or visit their Web site at **http://iep.uta.edu** for details, including current class schedule and charges.

Retention of Application Materials

Application materials become property of The University of Texas at Arlington and cannot be returned. Completed applications, transcripts, marksheets and diplomas, test scores and all application records for students who do not register in the semester for which they applied are retained by the Graduate School for one year.

Notification of Applicants Regarding Admission Decisions

While admission related information received from the graduate program to which an individual has applied may be important and useful, such information does not constitute official notice of admission into Graduate School or into a graduate program at The University of Texas at Arlington.

Official notification of the admission decision is issued by the Office of the Dean of Graduate Studies and is sent by the Graduate School directly to the applicant. It is very important that applicants read this notice carefully because it describes any conditions or restrictions placed on admission that must be addressed. Many of these conditions must be satisfied before the end of the first semester of enrollment. If they are not, a student may be barred from enrolling in subsequent semesters. Thus applicants should read the notice and keep it for future reference. Admission conditions described in official notification letters are described in the following section.

Types of Admission Decisions

After an applicant's credentials have been evaluated by the Graduate Advisor in the applicant's major area and by the Dean of Graduate Studies, the applicant will be notified by letter and e-mail from the Dean of Graduate Studies of: 1) acceptance and admission under one of the categories of admission listed below; or 2) denial of application; or 3) deferral of application for reasons listed in the letter.

If accepted, an acceptance notification will be sent by the Dean of Graduate Studies stating conditions for admission, if any, and period of validity of the acceptance. Applicants who have not received an admission notification one week prior to the beginning of classes for the semester for which admission is sought should contact the Graduate School for information concerning the status of their application.

Unconditional Admission

An applicant who meets all requirements is normally considered for unconditional admission.

Probationary Admission

An applicant who does not meet all requirements for unconditional admission nevertheless may show promise for successful graduate study and, upon recommendation of the appropriate Committee on Graduate Studies and approval of the Dean of Graduate Studies, may be granted probationary admission. Special course requirements or other conditions may be imposed by the Committee on Graduate Studies in the student's major area and/or by the Dean of Graduate Studies.

Provisional Admission

An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission upon recommendation of the appropriate Committee on Graduate Studies and approval of the Dean of Graduate Studies. Complete and satisfactory credentials must be received by the Graduate School before the end of the semester in which the student has registered in a provisional status. A student will not be permitted to enroll in the Graduate School with a provisional status for more than one semester. Provisional admission does not guarantee subsequent admission on an unconditional basis. International applicants residing outside of the United States at the time of application may not be admitted on a provisional basis. A student may not hold an assistantship while in provisional status.

Deferred Admission

If an applicant does not present adequate evidence of being able to supply required application materials or must complete additional preparatory work before their admissibility can be determined, the admission decision may be deferred until records are complete. The applicant will be sent an Admission Deferral Notice specifying the data that must be provided or the work that must be completed before the application will be reconsidered. The application may be reactivated for reprocessing by returning the "Request to Reactivate Application" that accompanied the Admission Deferral Notice. An application evaluation charge will be required for each reprocessing request unless the request in made for the original semester and program.

If more than a year has passed since initial admission or last update, a person must reapply (complete a new application, submit new copies of transcripts, marksheets, diplomas, test scores, letters of reference, and all other required materials) to the Graduate School and pay the appropriate evaluation charge.

Denied Admission

Admission is typically denied if an individual fails to meet more than one of the admission standards of the department to which he or she applied and the admission committee feels that there is insufficient basis to justify a probationary, provisional or deferred admission recommendation. As the admission process is competitive, students meeting basic admission requirements who are less well qualified than other applicants may also be denied admission.

Applicants denied admission to Graduate School may not take or reserve graduate courses for graduate credit. Applicants may reapply for admission if the deficiencies in credentials that led to denial are remedied. An application evaluation charge will be required for each reprocessing request. Applicants denied admission may ask the Graduate Advisor in the program to which they applied about the deficiencies that led to the denial.

Graduate English Skills Program

The Graduate English Skills Program (GESP) comprises an intensive English course designed for international students who have been conditionally accepted to the UT Arlington Graduate School because of marginally acceptable scores on verbal admission or English proficiency tests.

The program focuses on improving English language skills in the areas of academic writing, reading/research skills, note taking from academic lectures, accent reduction and oral presentations. Instruction includes technological support materials.

International students must receive admission from the Graduate School at UT Arlington and permission from their graduate departments to enroll in GESP to remove their English deficiencies.

Students who receive permission to enroll in GESP are tested in writing, reading, speaking and listening. Based on the outcome of placement tests, the English Language Institute (ELI) will recommend to the graduate departments the areas where each student needs improvement. A student may be required to take no further English or up to a maximum of three skill areas (five hours) per day. Students studying less than five hours of English per day may be allowed by their department to enroll in some graduate courses as well.

At the end of a semester, if the student has attained a minimum average of 85% during the semester, the GESP Coordinator will recommend to the graduate department that the student enroll for all graduate courses or continue studying English. Most students complete their English requirements in a semester.

GESP tuition charges and other information can be found at **http://iep.uta.edu** or contact the GESP Coordinator at the English Language Institute, Box 19560, Arlington, Texas 76019. Phone: 817.272.7576. Fax: 817.272.2731.

Application Deadline and Admission Requirements for U.S. Citizen Applicants

A U.S. citizen may complete the application online, or download an application package and apply by submitting a paper application. Since admission requirements vary and are program specific, go to **https://www.uta.edu/gradcatalog/toc** and click on the name of the program or department of interest for a detailed description of their admission requirements and procedures. Other information on admission may be found on individual department Web sites. Whether completing the application online or submitting the paper application, please refer to the U.S. Citizen application instructions that can be found at our Web site **https://grad.uta.edu** by selecting the Admission Center link. The application and required credentials should be submitted preferably 90 days prior to the date of expected enrollment if the applicant has completed no coursework at a foreign college or university. If foreign coursework has been completed, ap-

plicants should submit their materials at least 120 days before date of expected enrollment to allow sufficient processing time. The following credentials must be submitted by all U.S. Citizen and U.S. Resident Alien Applicants: 1) one, but preferably two, official transcripts of all undergraduate and graduate college work. Currently or previously enrolled UT Arlington students do not have to request UT Arlington transcripts be forwarded by the UT Arlington Registrar to the Graduate School; 2) scores on the Graduate Record Examination General Test or Graduate Management Admission Test as required by the intended program; 3) official TOEFL or TSE test score, if applicable; 4) three letters of recommendation; 5) general academic plans; and 6) a nonrefundable application evaluation charge of $40, if no foreign college or university work or $70 if foreign college or university work.

Some graduate programs may set deadlines for admission or consideration of applicants for graduate assistantships that are earlier than general deadlines established by the Graduate School. Such deadlines will be included in descriptions of admission requirements provided by each department. Applicants should read those materials carefully and submit their application materials before a departmental deadline passes. If the department does not specify a deadline, applicants should meet Graduate School deadlines described above.

Calculation of the Grade-Point Average for Admission Purposes for Students with Degrees from U.S. Colleges and Universities

The grade-point average for admission to the Graduate School at The University of Texas at Arlington is calculated according to Texas law and the policies and procedures of the Graduate School. For applicants completing work in U.S. institutions of higher learning, calculation of the grade-point average for admission purposes is based on the last two years of courses from the bachelor's degree transcript, on a 4.0 scale. In practice, this grade-point average is based on approximately the last 60 semester hours or the equivalent in quarter hours (90 quarter hours) shown on an applicant's bachelor's degree transcript.

In cases in which an applicant's transcript shows repeated courses, the grade-point calculation includes all grades earned in those courses.

For an applicant who applies before official receipt of the bachelor's degree, the grade-point calculation will include all senior college and university work completed to date. The grade-point average will not be automatically recalculated upon receipt of the degree.

An applicant wishing to have undergraduate courses completed after their degree included in the grade-point calculation may submit a written request to the Graduate School at the time the application for admission or application for reactivation/update is submitted.

An additional grade-point average is calculated for an applicant awarded or completing a master's or doctoral degree at the time application to UT Arlington is made. For master's level students, the grade-point calculation will include all graduate level courses taken subsequent to the bachelor's degree at the institution from which the degree has been or will be awarded. For doctoral level students, the grade-point calculation will include all graduate level courses taken subsequent to the bachelor's and master's degree at the institution from which the doctoral degree has been or will be awarded. The grade-point average will be calculated on the basis of information provided at the time application to UT Arlington is made and will not be automatically recalculated upon completion of on-going work or award of a degree.

International applicants and others with degrees earned outside the United States should see the grade-point calculation information under Admission of International Students and Resident Aliens.

The following are not included in grade-point calculations for admission purposes:

1. courses completed at junior or community colleges
2. courses completed by examination or correspondence
3. incomplete grades or withdrawals
4. pluses and minuses
5. personal improvement courses such as activity courses in physical education
6. graduate courses or any courses completed in graduate student status (a graduate grade-point average will be calculated and reported separately)
7. courses in which the grade is a P, pass, credit, satisfactory or other such designation

Academic Fresh Start

Undergraduate Programs

Texas residents may seek to enter undergraduate programs at UT Arlington under provisions of the "academic fresh start" statute, Section 51.931 of the Texas Education Code. When applicants inform UT Arlington admissions officials in writing of their decision, UT Arlington will not consider in the admissions decision any academic course credits or grades earned 10 or more years prior to the starting date of the semester in which the applicant seeks to enroll. Applicants who decide to apply under this statute may not receive any course credit for courses taken 10 or more years prior to enrollment under academic fresh start.

Postgraduate/Professional Programs

Applicants who have earned baccalaureate degrees under the "academic fresh start" statute, Section 51.931 of the Texas Education Code, and who apply for admission to a postgraduate or professional program will be evaluated on only the grade-point average of the course of work completed for that baccalaureate degree and the other criteria stated herein for admission to the postgraduate or professional program.

Application Deadline and Admission Requirements for International or U.S. Resident Alien Applicants

An International or U.S. Resident Alien applicant may complete the application online, or download an application package and apply by submitting a paper application. Since admission requirements vary and are program specific, go to **https://www.uta.edu/gradcatalog/toc** and click on the name of the program or department of interest for a detailed description of their admission requirements and procedures. Other information on admission may be found on individual department Web sites. Whether completing the application online or submitting the paper application, please refer to the International Student or U.S. Resident Alien application instructions that can be found at our Web site **https://grad.uta.edu** by selecting the Admission Center link. The application and following required credentials should be submitted preferably 120 days prior to the date of expected enrollment: 1) all international students must submit a nonrefund-

able application evaluation charge of $70; 2) one, but preferably two, official copies of marksheets, diplomas or transcripts of all undergraduate and graduate coursework; 3) official GRE or GMAT test score as specified by the department or program of application to which application is being made; 4) official TOEFL or TSE test score, if applicable; 5) three letters of recommendation; 6) general academic plans; 7) financial and/or immigration documentation as specified in the application instructions.

Calculation of the Grade-Point Average (GPA) for Admission Purposes for Students with Degrees from International Colleges and Universities

The calculation of the GPA for international applicants and U.S. resident aliens who have earned degrees from colleges or universities in the United States follows the policies and procedures for U.S. applicants. The diversity of marksheets and transcripts from foreign universities requires flexibility in calculating approximate equivalents of U.S. GPAs. Generally, GPAs for applicants with foreign degrees are calculated using the final grade for courses taken in the last two years of the applicants' undergraduate program. For an applicant who applies pending receipt of the bachelor's degree, the GPA calculation will include final course grades for the last two years of undergraduate work available at the time the application is submitted for processing. All grades are converted to the U.S. 4-point scale. Pluses and minuses, graduate courses, and personal improvement courses such as physical education are not included in these calculations.

An additional grade-point average is calculated for an applicant awarded or completing a master's or doctoral degree at the time application to UT Arlington is made. For master's level students, the grade-point calculation will include all graduate level courses taken subsequent to the bachelor's degree at the institution from which the degree has been or will be awarded. For doctoral level students, the grade-point calculation will include all graduate level courses taken subsequent to the bachelor's and master's degree at the institution from which the doctoral degree has been or will be awarded. The grade-point average will be calculated on the basis of information provided at the time application to UT Arlington is made and will not be automatically recalculated upon completion of on-going work or award of a degree.

Special Admissions Programs

Facilitated Admission of Outstanding UT Arlington Undergraduates

Upon the recommendation of the Graduate Advisor, outstanding graduates of The University of Texas at Arlington may be admitted to a master's degree program by facilitated admission. To qualify, the student must meet the following minimum requirements:

1. The student must have graduated from a commensurate bachelor's degree program at UT Arlington no more than one academic year prior to the semester for which admission to a graduate program is sought. A commensurate bachelor's degree program is one that is a normal feeder program for the master's degree program to which the student seeks admission. Undergraduate students in their final year of study are also eligible; in such cases, facilitated admission is conditional upon successful completion of the bachelor's degree.
2. The student's grade-point average must equal or exceed 3.5 in each of two calculations:
   a. the grade-point average in the last 60 hour of study as calculated in the Graduate School for admission purposes;
   b. all work completed at UT Arlington to date.

Students who qualify for facilitated admission will be admitted directly to the Graduate School without completing the application for admission, submitting an application evaluation charge or taking the GRE or GMAT. Students who believe they may qualify for this program should contact the appropriate Graduate Advisor. Some programs may require a higher grade-point average to qualify. Not all graduate programs participate in Facilitated Admission of Outstanding Undergraduates.

Waiver of the Graduate Record Examination

Upon recommendation of the Graduate Advisor, outstanding UT Arlington graduates may qualify for waiver of the requirements for the Graduate Record Examination (GRE). To qualify, the applicant must meet the following minimum requirements:

1. The student must have graduated from a commensurate bachelor's degree program at UT Arlington no more than three academic years prior to admission to the graduate program (as measured from the start of the semester for which admission is sought). A commensurate bachelor's degree program is one that is a normal feeder program for the master's degree program to which the student seeks admission. Undergraduate students in their final year of study are also eligible; in such cases, admission with the GRE waiver is contingent upon successful completion of the bachelor's degree.
2. The student's UT Arlington grade-point average must equal or exceed 3.0 in each of two calculations: (a) in the last 60 hours of study as calculated for admission by the Graduate School; (b) in all undergraduate coursework completed at UT Arlington.

Applicants qualifying for waiver of GRE who do not qualify for facilitated admission, must comply with all other requirements for admission, i.e., submitting the application for admission, paying fees, providing official transcripts from other institutions, and meeting any requirements established by the admitting graduate program. The GRE waiver must be recommended by the Graduate Advisor at the time of admission. The waiver of GRE program applies to applicants for master's degree programs only. Some programs may require higher grade-point averages to qualify. Not all graduate programs participate in the GRE waiver program.

Fast Track

The Fast Track program is designed to encourage gifted UT Arlington undergraduate students to complete a master's degree at UT Arlington, by enabling them to complete their undergraduate studies without delay and reducing the time and the number of additional courses needed to complete a master's degree. It is available in some graduate programs to outstanding UT Arlington undergraduate students and admission to these programs is highly selective. Participating undergraduate students use a set of courses specified by their graduate program to satisfy both undergraduate bachelor degree and graduate master's degree requirements. Students must formally apply to and be accepted as a Fast Track student by a participating graduate program to receive the full benefits of the program. Admitted students going on to complete all program requirements successfully will be automatically admissible to the associated master's program when they receive their bachelor's degree. They will not have to sub-

mit the formal application for admission to the Graduate School, pay an application evaluation fee, or take the GRE. Students who do not complete the Fast Track program may apply for admission per regular means but must take all required tests and pay all required fees. Admission in such cases is not automatic and will be based on the published admission requirements of the program applied to all regular applicants. Not all programs offer a Fast Track option. Interested students should consult with their intended program's graduate advisor prior to their senior year for detailed information regarding requirements and application procedures.

Non-Degree Seeking (Special) Applicants and Graduate Certificate Applicants

A person holding a bachelor's degree from a regionally accredited U.S. institution or its foreign equivalent wishing to take graduate courses at The University of Texas at Arlington but not planning to pursue a graduate degree may be admitted as a special non-degree seeking student or graduate certificate student with approval of the Dean of Graduate Studies and concurrence of the Committee on Graduate Studies in the area in which the applicant wishes to study. In most cases, admission as a special non-degree seeking student is granted only for the purpose of participating in special graduate course offerings or for taking courses to be transferred to another institution. Under normal circumstances, a student who has been denied admission to or been dismissed from the Graduate School will not be permitted to enroll as a special non-degree seeking or graduate certificate student.

Before submitting an application for admission, an applicant for special non-degree seeking student or graduate certificate should consult with the graduate advisor in the department or program in which the graduate course or graduate certificate is offered. Applicants may complete the application online. In addition to the application form, applicants must submit an official transcript of previous college work showing evidence of an undergraduate degree and, if applicable, a graduate degree. Special non-degree seeking student admission status is granted for the semester for which the application is submitted. Further enrollment as a special non-degree seeking student must be approved on a semester-by-semester basis. Graduate certificate enrollment is limited to the courses and length of time required to complete the graduate certificate program. Special non-degree students and graduate certificates may not hold graduate assistantships or enroll in research, thesis, internship or dissertation courses.

Up to 12 graduate level (5000 and above) semester credit hours earned as a special non-degree seeking student may be applied to a graduate degree program subject to the policies on grades and graduate credit described in the General Graduate School Regulations and Information section of this catalog. Review and approval of the appropriate Committee on Graduate Studies and the Dean of Graduate Studies are required. All grades in courses taken as a special non-degree seeking student and graduate certificate status will be considered in computing a student's graduate grade-point average.

A former or currently enrolled special student or graduate certificate student wishing to apply for admission to a graduate degree program must submit a regular Graduate School Application for Admission form, all supporting documents listed in the Admission section of this catalog, and the appropriate non-refundable application evaluation charge. Admission as a special student or graduate certificate student in no way guarantees subsequent admission into a graduate program or into the Graduate School.

NOTE: Immigration regulations do not generally permit International students to study as special non-degree seeking or certificate students. If you are an International Student, please contact the Graduate School before submitting an application so that eligibility to apply as a special non-degree seeking or graduate certificate student can be determined.

Changing Starting Semester, Program, or Degree Level Prior to Admission at UT Arlington

Applicants wishing to change the semester in which they plan to start study at UT Arlington, programs in which they wish to be considered for admission, or degree levels for which they initially applied, may request that their application be reprocessed for possible admission by completing the form "Request To Update/Reactivate Application." This form can be found at our Web site **https://grad.uta.edu** by selecting the Virtual Graduate Admissions link. The initial admission decision does not automatically apply when an applicant requests these types of changes to their application. When a request is received, the appropriate non-refundable U.S. Citizen, Resident Alien or International Student application evaluation charge must be paid in order to begin processing of the request. Once the fee is paid the application is thoroughly re-evaluated to ensure it is complete and current and a new admission decision will be made. A person must reapply (complete a new application, submit new copies of transcripts, marksheets, diplomas, test scores, letters of reference, and all other required materials) to the Graduate School and pay the appropriate evaluation charge if more than a year has passed since initial admission or the last update/reactivation request.

Changing Graduate Major, Program or Degree Level after Start of Enrollment at UT Arlington

Students wishing to change graduate major, program or degree level from the one in which they are enrolled currently or in which they were enrolled during their most recent semester at UT Arlington must initiate the change by completing the "Request for Change of Graduate Program or Degree Level" form. Students may submit only one "Request for Change of Graduate Program or Degree Level" form at a time. Additional forms will not be processed until a final decision on the previous request has been made. Students intending to change majors should consult the Graduate Advisor of the new program regarding program admission and degree requirements before completing this form. Similarly, students wishing to change degree level should submit the request after discussing the matter with the appropriate graduate advisor.

Students wishing to change from one program to a dual degree program must complete the "Request for Change of Graduate Program or Degree Level" form and mark the box stating "Request to Change to Dual Degree Program (master's level only).

Students wishing to change from a dual degree program to one program must complete the "Request For Change of Graduate Program or Degree Level" form and mark the box stating "Request to Change to New Graduate Program."

Students wishing to change from Doctoral to Masters degree level for conferral of the masters degree must complete the "Request for Change of Graduate Program or Degree Level" form and mark the box stating "Request to change form PhD to Masters status (for conferral of the master's degree)." Students will remain in masters status until award of the masters degree. Upon award of the masters degree

students will be automatically changed back to doctoral status.

The "Request For Change of Graduate Program or Degree level' form can be found at our Web site **https://grad.uta.edu** by selecting the Virtual Graduate Advisor link or by request from the Graduate School Office.

Readmission

A student previously enrolled in The University of Texas at Arlington Graduate School wishing to resume graduate work after an absence of a fall or spring semester or longer (summer excluded) must submit an "Application for Readmission to the Graduate School" form and pay the required non-refundable application evaluation charge. This rule does not apply to a student who withdraws with an Approved Leave of Absence or to a student who withdraws from the university to perform active military service (not including Texas National Guard training exercise). A student returning from an Approved Leave of Absence as scheduled will be automatically readmitted and will not be required to submit an application or pay an application fee. A student withdrawing due to military service will not have to reapply for admission and will be readmitted upon a request made within one year of being released from active military services and may be eligible for the same financial assistance provided before the student's withdrawal (TEC, Section 51.9242).

The Application for Readmission can be found at our web site **https://grad.uta.edu** by selecting the Virtual Graduate Admissions Counselor. A $40 application charge is required of all U.S. Citizen and U.S. Resident Alien applicants who have attempted or completed all of their college or university work at institutions located in the United States. A $70 evaluation charge is required of all U.S. Citizen and U.S. Resident Alien applicants who have attempted or completed some or all of their coursework at an institution located outside of the United States. A $70 evaluation charge is required of all International students. Payment must be received before processing can begin. An application evaluation charge is required with each readmission application form submitted. International students and U.S. Resident Alien students should submit this form and pay the required non-refundable evaluation charge 120 days prior to their expected semester of enrollment and U.S. Citizen students, 90 days prior to their expected date of enrollment.

An applicant for readmission should consult with the graduate advisor of the program or the graduate advisors of the dual degree programs before submitting the readmission form and fee to the Graduate School. This is particularly important when requesting readmission to a new program or requesting a change to a dual degree program. An applicant last enrolled in a dual program who wishes to continue in the same dual degree program must list both programs on the readmission form. An applicant last enrolled in a dual degree program who wishes to return to one program, whether it be one of the dual degree programs in which they were previously enrolled or a new program, must list only that one program on the readmission form. An applicant last enrolled in one program that now wishes to apply for a dual degree program must list both dual programs on the readmission form.

A student who has been dismissed from the Graduate School for failure to meet the terms of academic probation, admission probation, provisional admission or other conditions may be readmitted for further graduate study in the same or in a different program or dual degree program only if a Petition to the Graduate Faculty has been approved by the appropriate Committee on Graduate Studies and the Dean of Graduate Studies. The Petition to the Graduate Faculty form is available online from the Graduate School Web page at **https://grad.uta.edu** by selecting the Virtual Graduate School Advisor or in the Graduate School Office, Room 333 Davis Hall.

An applicant for readmission who has enrolled at other institutions during their absence from UT Arlington (including those in UT Arlington concurrent enrollment) must submit official transcripts showing such coursework to the Graduate School. Those who wish to readmit after an absence of five years or more are required to complete a new student application. New student applications for admission must be made on the official application form available online through the Virtual Graduate Admissions Counselor or by request made to the Graduate School Office, Room 333 Davis Hall.

Graduate Student Advisement

After being admitted, students should confer (preferably in person) with the Graduate Advisor of their major area to become familiar with specific departmental regulations, particularly those that require additional examinations upon entrance, as well as the details of registration, course selection and other procedures. It is important that a student wishing to take courses for graduate credit consult the appropriate Graduate Advisor before registering, as each student's course of study must be approved by the Graduate Advisor, the Committee on Graduate Studies, the student's supervising committee and the Dean of Graduate Studies. Failure to consult with the Graduate Advisor could result in the student's enrolling for courses that are not applicable toward meeting graduate degree requirements. Graduate Advisor contact information is available from **https://grad.uta.edu**.

Registration

Students should be familiar with all dates on the Graduate School calendars printed in this catalog or online at **www.uta.edu/uta/acadcal**. UT Arlington offers web registration through MyMav, the University student information system. Specific registration instructions, time tables, class schedules and other information to assist students with registration is published by the Office of Records (Registrar) and is accessible at **www.uta.edu** by selecting the Current Student link. International applicants should also consult the "Registration and Orientation for International Students" section in this catalog and an International Student Advisor in the UT Arlington Office of International Education for registration regulations.

Restrictions on Admission

General Restriction

The University of Texas at Arlington may limit the number of students accepted in a program if the number of applicants exceeds the resources needed to support the educational objectives of that program.

Faculty Members

Members of the UT Arlington faculty holding an appointment at the rank of instructor or above may not pursue a graduate degree at the University.

Tuition, Fees, and Charges

www.uta.edu/fees

Tuition, fees, and charges are subject to change. Charges will be effective upon the date of enactment and will be reflected in tuition, fees, and charges assessed. Tuition, fees, and charges are authorized by state statute; however, the specific amounts and the determination to increase the fees and charges are made by The University of Texas at Arlington administration and The University of Texas System Board of Regents. Visit **www.uta.edu/fees** for current tuition, fees, and charges.

Tuition is charged based on course of study; therefore, a precise semester registration total may be calculated by accessing the Registration Cost Estimation site at **www.uta.edu/fees.**

Graduate students who enrolled under the Summer 1999 or subsequent catalogs will be charged non-Texas resident tuition under the following conditions: A doctoral student must pay non-resident tuition beginning the first long semester in which a) the student has been enrolled previously as a graduate student for 14 or more long semesters, AND b) the student has accumulated more than 99 semester credit hours of doctoral study at UT Arlington. Students exceeding both limits will not be eligible for assistantships supported by state funds.

A Designated Tuition Discount will be given to students who meet ALL of the requirements published at **www.uta.edu/fees.**

Description of Tuition, Fees, and Charges

Tuition, fees, and charges are assessed to students based on semester credit hours (SCH), a set charge per semester, or specific services. They are required of all students, charged to everyone taking specific courses or anyone receiving specific services, or charged only for voluntary products or services. Refer to **www.uta.edu/fees** and choose Tuition, Fees, and Charges for a detailed description.

Other Fees, Charges, and Expenses

International Student Health Insurance

International students are required to purchase The University of Texas at Arlington Student Health Insurance Plan while enrolled at the University. Exceptions to this requirement are:

- Coverage by the UT Arlington faculty/staff insurance
- Continuing coverage under a mandatory government-sponsored health plan
- Continuing coverage under a mandatory employer-sponsored insurance plan

Proof of coverage and benefits provided must be documented and must be comparable to the University-sponsored plan. All policies under the three categories of exceptions must contain at least a $7,500 repatriation benefit and a $10,000 medical evacuation benefit. All policies must meet USIA regulations for those in "J" status. If coverage does not include medical evacuation and repatriation, supplemental policies covering those items will be made available.

Mav Express Card Features and Charges

The Mav Express Card is used for accessing controlled facilities, checking books from the Library, and for cashing checks at Bursar Services. In addition, it is used for on-campus printing privileges, admission to various University activities, and as a form of personal identification.

A student may choose to deposit money on the Mav Express Card. This debit feature is called Mav Money. Students may use Mav Money at Dining Services, Bursar Services, University Center, University Bookstore, vending machines and many other locations on and off campus. Deposits may be made and account activity reviewed online. In addition, a student may link a Mav Express Card to a free Wells Fargo checking account which allows the student to make PIN-based debit transactions.

Each student at UT Arlington is required to pay a $15 Mav Express Card activation charge for each fall, spring, and 11-week summer semester of enrollment. The 5-week summer session, Summer Intersession, and Winter Intersession are $7 each.

The Mav Express Card is a permanent card. As a student registers for a semester, the card is automatically validated. It is not necessary to obtain an additional Mav Express Card unless the student loses or destroys the card. The replacement charge for a lost or destroyed card is $15.

For additional information, visit **www.uta.edu/mavexpress** or call 817.272.2645.

Maverick Parking Garage

The optional parking garage is available at an additional per term charge, plus gate card deposit. Day and night passes are offered, however the official meeting time of all classes must be 5:30 p.m. or later to qualify for the night pass. Passes must be picked up at the garage and are only for parking in the garage. The garage is normally closed between terms. A parking permit must be purchased for parking elsewhere on campus. Contact the Maverick Parking Garage at 817.272.2370 for specific rates and availability.

Parking Permit Charge

All students who drive a vehicle on campus, need a permit to enter or park legally on campus. Please order your permit online for Decal Request through the registration screen from your student service center on the Web. All students who order their permit before the first day of class will be mailed their permit. The permit will be mailed to their current University mailing address. If students order their permit after the first day of class, they will need to pick up the permit at the University Police Parking Service Office, 1225 W. Mitchell, Suite 112. Hours of business are 7:30 a.m. to 5 p.m. Monday-Friday, with the exception of registration periods. Students picking up dorm or rental property parking permit, must show proof of residency if they are not listed as primary resident.

If students withdraw from school any time before classes begin or before the census date, they must bring their permit to the Parking Office to receive a full/partial refund or mail the permit back by certified mail. If the permit is not returned, or if students lose or misplace the permit, a refund cannot be given. Each student will receive only ONE permit per fiscal year. If it becomes necessary to drive a different vehicle, the permit is transferable. However, the permit owner is responsible for all violations accrued by any vehicle that has their permit displayed. Students who terminate their enrollment prior to

spring registration and who have paid a vehicle permit fee may receive a partial refund in accordance with the Rules and Regulations booklet provided they return their permit. No refunds on parking permits will be given after the spring census date for students. Ownership of the permit remains with the institution and is not transferable.

Students are responsible for picking up a copy or visiting the Web site for the Rules and Regulations booklet that contains campus parking policies. For additional parking information or hours of extended service during registration, call 817.272.3907 or visit the Web site **www.uta.edu/police/parking**.

Graduation Charges

A graduation charge must be paid by each baccalaureate degree candidate when application is made for graduation. If graduation is delayed past the stated semester, the student must reapply for graduation and repay the graduation charge. An additional charge to cover the cost of cap and gown is assessed to each candidate who plans to attend any graduation ceremony. Students who request that their diplomas be mailed after graduation will be required to pay the first class mailing cost.

Cost of Books

Cost of books depends upon the courses selected. Generally, books for technical subjects are somewhat higher than those for other academic subjects. In certain technical, scientific and fine arts fields, there are extra expenses for equipment and supplies.

The University Bookstore has available both new and used textbooks. The bookstore will purchase used textbooks which are in good condition at any time during the year provided such textbooks continue to be used by the academic departments and if needed by the bookstore.

Transcripts

The Registrar's Office will mail an official copy of an academic transcript at the written request of a student upon receipt of payment of $7 for each copy requested. When working conditions permit, the office will provide one-day transcript service if requested. An official transcript will not be issued unless all financial obligations to the University have been satisfied.

Tuition, Fees, and Charges: Exemptions and Waivers

State law provides for several exemptions or waivers of tuition, fees, and charges. Students qualified for a reduced rate in any of the following categories must have that eligibility certified prior to registration. For a complete description and eligibility requirements, please go to **www.uta.edu/fees** and select Exemptions and Waivers. This Web site will also provide department contact information and tuition, fees, and charges that are exempt or waived. Additional information may be found in the Texas Education Code.

In Absentia Registration Fee

A candidate for a degree who has completed all requirements for graduation by the last date to qualify for in absentia registration (see Graduate School calendars) and who needs to register in the University for the sole purpose of having a degree conferred may register *In Absentia* with permission of the Graduate Advisor and the Dean of Graduate Studies. To obtain permission, the student should file a Request to Register *In Absentia*. A student registered in absentia may not enroll for courses. The *In Absentia* registration fee is $15; no refund is made for the cancellation of an *In Absentia* registration. In addition to paying the cost of *In Absentia* registration, the candidate must file an application for graduation and pay the diploma fee for the semester of graduation.

Academic Common Market

The Academic Common Market is an interstate agreement for sharing academic programs through an exchange of students across state lines. Fifteen southern states take part in the Academic Common Market. Texas, Florida and North Carolina participate at the graduate level only. Selected out-of-state programs that are not offered in a student's home state can be accessed through the Academic Common Market at in-state tuition rates.

For information on the graduate programs at The University of Texas at Arlington that are available through the Academic Common Market and the states that have access to those programs, contact the Graduate School or the Academic Common Market coordinator in the home state.

Further information on the Academic Common Market may be obtained from the Texas State Coordinator for the Academic Common Market: Texas Higher Education Coordinating Board, P.O. Box 12788, Austin, Texas, 78711. Phone: 512.427.6525. E-mail: linda.mcdonough@thecb.state.tx.us

Payment of Tuition, Fees, and Charges

Please go to **www.uta.edu/fees** for information on due dates, deadlines, detailed penalties and refunds.

Withdrawal for Non-Payment

Please go to **www.uta.edu/fees** and select **Withdrawal for Non-Payment** for current detailed information.

Payment Options

Please go to **www.uta.edu/fees** and select Registration Payment Information for current detailed information.

- **Installment Plan:** A student is activated on the Installment Plan by agreeing to the Registrant's Responsibilies and by paying one third (1/3) of the current term balance. Additionally, if your tuition, fees, and charges increase for any reason, such as residency status changes or schedule adjustments, the new higher total must be used in your current term calculations The service charge for choosing this option is $10 for each additional billing (max $20 per term). By using the Installment Plan, you will not be eligible for a Designated Tuition discount. Visit **www.uta.edu/fees** and select Installment Plan for more information.

Note: The following quotation from Texas Education Code 54.007 applies to installment payments due: "A student who fails to make full payment of tuition and fees, including any incidental fees, by the due date may be prohibited from registering for classes until full payment is made. A student who fails to make payment prior to the end of the semester may be denied credit for the work done that semester."

- **Financial Aid:** Please read the Financial Aid section of this catalog or visit **www.uta.edu/fao** for information.
- **Enrollment Loans:** Loans are offered only if funds are available and the borrower meets underwriting requirements published at **www.uta.edu/fees**. Please visit this Web site for specific information.
- **Third Party Billing:** Sponsored Student Information can be found at **www.uta.edu/fees**.

Questions may be directed to Bursar Services, 817.272.2172. Detailed student account information may not be released to anyone other than the student without the student's written permission in Bursar Services.

Payment Methods and Locations

The University accepts cash, checks, traveler's checks, money orders, and the following credit cards: Master Card, Visa, Diners Club, Discover, and American Express. Any form of payment (check, electronic bank draft, or credit card) that is returned unpaid can result in enrollment withdrawal and additional penalties.

- **Online:** Pay by credit card or electronic bank draft/ACH transfer from your checking or savings account at **www.uta.edu/makepayment**.
- **24-Hour Drop Box:** Check or money order payments may be placed in the drop box adjacent to Bursar Services. Please include your 10-digit student ID number. Do not deposit cash in the drop box.
- **In Person:** Payments can be made in person at Bursar Services, Room 130, Davis Hall.
- **Mail:** Please include your 10-digit student ID number and do not mail cash. Check or money order payments can be mailed to:

  UT Arlington Bursar Services
  1225 W Mitchell Box 19649
  Arlington TX 76019-0001

- **Traveler's Check:** Traveler's checks must be signed in the presence of a cashier and should be presented in person at the Bursar's window during their regular business hours.

Concurrent Enrollment

Cooperative Programs Between University of Texas System Components

A student concurrently enrolling at two or more University of Texas System components and participating in a joint cooperative program may register and pay tuition, fees, and charges for all courses through the student's home institution. Detailed procedures may be obtained from the registrar of the student's home institution. UT Arlington students will find additional information by going to **www.uta.edu/fees** and selecting Concurrent Enrollment.

The concurrent enrollment agreement and waiver of specified fees and charges applies only to students following the concurrent enrollment procedures specified by the registrar of the home institution.

Applicable tuition, fees and charges will be assessed and collected at the home institution for the other institution(s):

Student services at the second institution will be made available to concurrently enrolled students paying the appropriate student service fees at the second institution. Some institutions have a reciprocal agreement for honoring parking permits. Details may be obtained from the police departments on each campus.

Concurrently enrolled students should report any problems concerning registration, payment of tuition, fees, and charges or other matters related to concurrent enrollment procedures to the registrar of the home institution.

Concurrent students wishing to add or drop courses must do so in compliance with the host institution's policy. On or before the host institution's Census Date, adds or drops may be done through the home institution's registrar. After the Census Date, drops must be done at the host institution.

Sponsored Students

It is the student's responsibility to contact Bursar Services, Room 130, Davis Hall, 817.272.2172, each semester prior to the payment deadline date to confirm that an authorization has been received and is sufficient to secure the current term registration.

Residency Regulations

Resident classifications are determined in accordance with Title 19, Chapter 21, Subchapter X of the Texas Administrative Code and the rules of the Texas Higher Education Coordinating Board for determining residence status. Except as specifically provided by law, an individual classified as a nonresident student must pay tuition, fees, and charges required of nonresident students. Students may access the Coordinating Board's rules at **http://www.thecb.state.tx.us/Rules/tac3.cfm?Chapter_ID=21&Subchapter=X.**

To be considered a Texas Resident a person must establish a domicile in Texas not later than one year before the census date of the academic term in which the person is enrolled in an institution of higher education, and maintain that domicile continuously for the year preceding the census date. Generally, a person enrolling in an institution of higher education prior to having established a domicile in Texas for 12 consecutive months immediately preceding the census date will be classified as a nonresident student.

Additionally, a person is eligible to be classified as a Texas Resident if the person: maintained a domicile in Texas for at least 36 months prior to graduation from a Texas high school or receipt of the equivalent to a Texas high school diploma, graduated from a Texas high school or received the equivalent of a Texas high school diploma, and maintained a residence in Texas for the 12 months preceding the census date at an institution of higher education. The domicile of a dependent's parents is presumed to be the domicile of the dependent unless the dependent meets all the requirements of this paragraph.

If while attending an institution of higher education a person classified as a nonresident meets the requirements to domicile in Texas, the nonresident student may reclassify as a Texas Resident if business and personal facts or actions are unequivocally indicative of a fixed intention to domicile permanently in Texas. A nonresident classification is presumed to be correct as long as the residence of the individual in Texas is primarily for the purpose of attending an educational institution. Students wishing to reclassify will need to complete a set of the Core Residency Questions and turn them into the Undergraduate Admissions Office with supporting documentation.

Generally, a student attending The University of Texas at Arlington who is not classified as a Texas Resident will be charged nonresident tuition. Certain nonresident students, however, are entitled to pay tuition and other fees at the Texas Resident rate. For example, military personnel assigned to duty in Texas, and their spouses and dependent children, are entitled to pay the same tuition as a Texas resident if certain documentation is provided. Similarly, students who

hold a competitive academic scholarship of $1,000 per year or more awarded through The University of Texas at Arlington are entitled to pay resident fees and charges. Other exceptions to the requirement that nonresident students pay nonresident tuition, fees, and charges are included in the Texas Higher Education Coordinating Board rules for determining residence status.

The responsibility of registering under and maintaining the proper residence classification rests on the student. If there is any question concerning the student's classification at the time of registration, or any time thereafter, it is the student's obligation to consult with the residence advisor in the Graduate School and have the student's classification officially determined. All requests for reclassification should be submitted to the Graduate School at least 30 days prior to the census date of the term in question. Residency appeals are made to the Residency Appeals Committee. Decisions of the committee are final.

Schedule Adjustments

All adds, drops and other registration adjustments throughout the term will cause an immediate, automatic fee recalculation.

Dropping Course(s) but Continuing Enrollment

Students who remain enrolled in at least one course will be refunded in full for any course dropped by the 12th class day. If a course is dropped after the 12th day of class, the student is financially responsible for the full cost of the course.

Total Withdrawal from School

A student who officially withdraws from a term (drops all hours of a specific term) will receive a refund according to the schedule below.

1. A student who withdraws prior to the first official university class day will receive a 100 percent refund.
2. If the foregoing condition is not met, then the refund shall be as shown below. Class days noted are official University class days based on the term's long session start date. They are not the individual student's class meeting days.
   - During class days 1 through 5—80%
   - During class days 6 through 10—70%
   - During class days 11 through 15—50%
   - During class days 16 through 20—25%
   - After 20th class day—no refund
3. Parking refunds must be applied for separately at the Parking Office, 1225 W. Mitchell.

Return of Title IV and Other Aid Funds

If a student receiving financial assistance withdraws (resigns) from all courses at the University of Texas at Arlington, then UT Arlington and/or the student may be required to return some of the federal, state, and/or institutional funds awarded to the student. These funds would be returned to the grant, scholarship, or loan fund from which the assistance was received.

The federal Return of Title IV Funds policy requires that a portion of federal aid be returned if the student withdraws on or before completing 60% of the semester for which student received federal aid. Students receiving all grades of F or a combination of all Fs and Ws are subject to the Return of Title IV Funds Calculation. Federal financial aid includes the Federal Pell Grant, Federal Academic Competitiveness Grant (ACG), Federal SMART Grant, Federal Supplemental Educational Opportunity Grant (FSEOG), LEAP Grant (formerly SSIG), Federal Perkins Loan, Federal Stafford Loan (subsidized and unsubsidized), and the Federal Parent Loan for Undergraduate Students (PLUS).

Depending on the types and amounts of aid received, UT Arlington may be required to return a certain portion of funds, and the student may be required to repay a portion of the funds. If the student owes a repayment of grant funds as a result of the calculation, he/she cannot receive future federal financial aid funds at any school until repayment has been made. Any federal loan amount owed by the student is to be repaid under the terms of the promissory note (see example below). The student may owe an outstanding balance to UT Arlington once we return funds required through the federal Return of Title IV Funds calculation. Complete details of the policy can be found at **www.uta/fao**, click Financial Aid on the left menu, then Return of Funds Policy. Contact the Office of Financial Aid for additional information.

Refunds

Current detailed information is available at **www.uta.edu/fees**. Select Refunds of Registration Charges. UT Arlington recommends the use of Direct Deposit for receiving refunds. Inquiries concerning refunds should be directed to Bursar Services, Room 130, Davis Hall, 817.272.2172.

Student Services

Campus Recreation

500 W. Nedderman Drive • Box 19268 • 817.272.3277 • www.uta.edu/campusrec

The Department of Campus Recreation provides a diverse offering of recreational and leisure experiences for students. More than 80 activities in competitive and recreational areas, team, individual and co-recreational, are scheduled throughout the year. The Campus Recreation office is located in Room 100 of the Maverick Activities Center (MAC); the phone number is 817.272.3277. Visit the Web site at **www.uta.edu/campusrec** for more information on any of the programs listed.

The Department of Campus Recreation is comprised of six areas:

- Students are welcome to drop by the MAC or the Campus Recreation Fields Complex for **Informal Recreation** and create their own fun. They may choose from a variety of activities such as, racquetball, basketball, volleyball, badminton, table tennis and indoor track. The MAC is a state-of-the-art $34.5 million recreation facility where students, faculty, staff and alumni can continue to be engaged in UT Arlington's campus life. The MAC offers 20,000 sq. ft., weight and fitness room, 4 multipurpose rooms, 5 basketball courts, 8 volleyball courts, an indoor soccer gym, 5 racquetball courts, 10 badminton courts, a game room, a computer café, men's and women's locker rooms and much more. The fitness center cardiovascular machines, locker/shower facilities and smoothie bar/lounge are also available. Students are able to access the MAC for free with a valid Mav Express card. For more information on the MAC visit **www.uta.edu/mac**.
- **Intramural Sports** provides opportunities for participation in recreational and competitive activities. Divisions for men, women, and co-recreational teams are offered in team activities and in many individual/dual sports. Activities include flag football, bowling, soccer, golf, table tennis, billiards and many more.
- **QUEST University Wellness** is designed to enhance personal wellness. Various programs are offered (some for a nominal fee) through QUEST, including group exercise classes, fitness testing, personal training, massage therapy, and nutrition assessments.
- The **Sport Clubs** program serves individual interests in different sports. Some clubs represent UT Arlington in intercollegiate competition and/or conduct activities such as practice and instruction. Membership guidelines vary. Some of the current clubs include men's and women's soccer, men's and women's volleyball, cycling, martial arts, lacrosse, roller hockey, pool team and adventure team.
- The **Aquatics** program provides swimming opportunities to the UT Arlington community. The indoor and outdoor pool allow for lap and recreational swimming all year long. The pools are located in the Physical Education Building at 801 Greek Row.
- The UT Arlington **Spirit Groups** consist of the Cheerleading Squad, Dance Squad and the Mascot. The groups join together in providing support for UT Arlington athletic teams and leading the University community in spirit. These athletes represent UT Arlington at the collegiate national championship during the year and host camps and clinics throughout the summer. For more information visit **www.uta.edu/spiritgroups**.

Career Services

Career Services assists students and alumni in finding full-time, part-time and internship opportunities. Services provided include: career development workshops, job listings, resume critiques, on-campus employment interviews, job fairs and information on careers, employers and job search techniques.

Career Services has three offices across campus to better serve UT Arlington students and employers.

- Business Career Services offers part-time, full-time and internship opportunities to students and alumni.
- Student Employment Services offers non-degree-required part-time and full-time opportunities to currently enrolled students in all degree programs. In addition, work-study positions are posted for off-campus employment.
- University Career Services offers full-time degreed opportunities and internships to students and alumni in all degree programs.

Employer Showcase and on-campus recruiting are hosted in the fall and spring semesters.

Career Services Locations

- Web site: **hireamaverick.uta.edu**
- University Career Services: Room 216, Davis Hall, 817.272.2932
- Business Career Services: Room 106, Business Bldg., 817.272.5201
- Student Employment Services: Room 140, University Center, 817.272.2895

Center for Community Service Learning

B18 Davis Hall • Box 19124 • 817.272.2124 • www.uta.edu/servicelearning/

UT Arlington and the Center for Community Service Learning believe in the role of higher education in preparing students for life in a democratic, civilized society and in educating students who will become engaged citizens and serve their community. Since its founding in fall 2001, the Center for Community Service Learning has been providing service-learning opportunities to students and faculty at UT Arlington.

The center (1) develops and supports opportunities for students and faculty to integrate academic study with community service; (2) helps faculty and students with service-learning placements, faculty development, curriculum development and assessment; (3) houses a service-learning resource library and a database of community agencies; and (4) administers faculty development grants, faculty and student service-learning awards and student service scholarships. Contact: Dr. Shirley Theriot, director, **theriot@uta.edu**, 817.272.2124, or Sharon Hughlett at **hughlett@uta.edu**.

Counseling Services

216 Davis Hall • 817.272.3671 • www.uta.edu/counseling

Counseling Services is available to help students grow as whole individuals. UT Arlington counselors assist students in

- personal growth and development
- improving academic performance
- career planning and decision making
- leading healthy lifestyles
- improving relationships

Students may meet one-on-one with counselors, attend workshops or meet in groups. Services are available to enrolled UT Arlington students at no charge.

Workshop topics vary by semester and may include Enhancing Self-Esteem, Stress Management, Relaxation Training, Healthy Relationships, Anger Management, Time Management, Improving Your Study Skills and Career Exploration.

Group counseling themes include General Group Counseling, Advanced Relaxation Techniques, Assertiveness Skills Training and Career Exploration.

Career assessments and workshops are available to help students gain greater awareness of their interests, values, personality, skills and abilities. A career library with computerized career assessments, books, magazines and other materials is available to help students conduct career-related research. You can access these services by scheduling an appointment with a counselor.

Schedule an appointment by contacting Counseling Services at 817.272.3671. The Counseling Office is open 8 a.m.-7 p.m. every Monday and Thursday and 8 a.m.-5 p.m. on Tuesday, Wednesday and Friday. For more information, visit **www.uta.edu/counseling.**

Disability Services (Office for Students with Disabilities)

102 University Hall • Box 19510 • 817.272.3364 • TDD 800.RELAY TX • www.uta.edu/disability

The Office for Students with Disabilities (OSD) at UT Arlington is charged with ensuring full inclusion of students with disabilities in all programs and activities offered at UT Arlington. In compliance with the Americans with Disabilities Act of 1990, OSD verifies all physical and cognitive disabilities in order to specify the appropriate disability-specific accommodations that will assist students in successfully completing their academic objectives. All UT Arlington students with disabilities requiring accommodations should contact OSD at 817.272.3364 (voice) or 800.RELAY TX (TDD) or they may visit the office in 102 University Hall, Monday-Friday, 8 a.m. to 5 p.m. Any academic accommodations relating to a disabling condition must originate with the Office for Students with Disabilities. For more information regarding services or documentation requirements, please visit **www.uta.edu/disability.**

Financial Aid

252 Davis Hall • Box 19199 • 817.272.3561 • www2.uta.edu/fao

The following summaries are for informational purposes only. Current information on each program is available from the Financial Aid Office and by accessing the Financial Aid Web site.

Students subject to selective service registration will be required to file a statement that the student has registered or is exempt from selective service registration to be eligible to apply for state or federal financial aid.

Assistance Based on Need

Students wishing to participate in any of the following financial aid programs should complete a Free Application for Federal Student Aid (FAFSA) as early as possible prior to their actual enrollment at the University. The funding process takes approximately four weeks for completion. Financial aid in these categories is generally limited to U.S. citizens or those in this country on other than temporary visa status. Funding for graduate courses is only available to students admitted to the Graduate School as "Regular" students. "Special" and "Transient" students are not eligible for these programs.

Grant Assistance

There is a limited amount of grant funding available for graduate students through the Texas Public Education Grant and the Mav Grant. Recipients must have demonstrated financial need as verified through the completion of the FAFSA, and meet the published priority financial aid application deadline.

Federal Perkins Loan and Federal Stafford Loan

These are the primary sources of long-term loans available at UT Arlington. Both programs include deferred repayment provisions that permit students to repay the loan after termination of at least half-time studies at the University. For those students demonstrating financial need, interest will not accrue on the loans while the borrowers are enrolled on at least a half-time basis. Information regarding loan amounts and terms can be obtained from the Financial Aid Office.

Federal Unsubsidized Stafford Loan and Graduate PLUS Loan

These loans are available to graduate students who do not necessarily demonstrate financial need. Interest on these loans accrues while the recipient is in school but repayment may be deferred on both interest and principle until the student is no longer enrolled at least half time. The Graduate PLUS loan is a credit based loan that is available to graduate students who have financial aid eligibility beyond what may be met through other types of financial aid including the Federal Subsidized and Unsubsidized Stafford Loans combined.

Federal Work-Study Program

A student who needs a job to help pay for college expenses may be eligible for employment through the Federal Work-Study Program. Eligibility is based on financial need as determined by the FAFSA. Most participants are employed in positions with various University departments, but limited off-campus jobs with certain approved agencies are also available.

Financial Counseling

The Financial Aid Office provides financial or budgetary counseling for any and all students regardless of whether they qualify for other types of financial assistance.

Out-of-State Student Assistance

Several states offer aid to their students attending schools in other states. Amounts and requirements for this assistance vary greatly. Further information can be obtained from the home-state aid agency.

Veterans' Assistance

Contact the Registrar's Office for information concerning eligibility for and payment of VA benefits and other matters for veterans attending or planning to attend UT Arlington.

Scholarships

252 Davis Hall • Box 19199 • 817.272.2197 • www2.uta.edu/fao/scholarships

The University of Texas at Arlington provides a variety of scholarship programs for students who have demonstrated exceptional

academic achievement. UT Arlington also offers a number of endowed scholarships that are administered by a school, department or program. Graduate scholarships are awarded on the basis of scholastic excellence and adequate preparation for graduate study in the student's chosen field, as shown by the student's academic record. Scholarship eligibility criteria include admission into a degree program, enrollment in coursework leading to the degree, reasonable progress in the degree program, good academic standing, GPA, and in some cases, test scores, references and personal statements. There are additional specific qualifications for scholarships in various areas of study. Students are encouraged to contact their school dean or department/program office to obtain information about eligibility criteria and scholarships awarded in the student's area of study.

In addition to the specific qualifications required for various competitive scholarships awarded by the University, the committee responsible for selection of a given scholarship may consider such factors as leadership, community involvement and financial need. State law and the Rules and Regulations of the Board of Regents of The University of Texas System require that any scholarship and/or fellowship be approved by the appropriate scholarship, loans and awards committee (graduate or undergraduate). For graduate students, the Dean of Graduate Studies serves as the committee chair. Scholarship funds have been contributed by individual donors, UT Arlington alumni, corporations, government agencies and other entities to recognize and reward academic excellence.

Assistantships

Research and teaching assistantships available in most departments can be held only by students admitted unconditionally or on probation to Graduate School. Students admitted provisionally or students who are on academic probation are not eligible for assistantships. Prospective graduate students should contact the appropriate department chairperson for further information. To be continued on a research or teaching assistantship, a student must be in good standing and have performed assigned duties satisfactorily in the preceding semesters as determined by the respective department. Consult the catalog section on General Graduate School Regulations and Information for regulations regarding registration and responsibility of graduate assistants.

Before being appointed to an assistantship at UT Arlington, a student whose native language is not English must demonstrate English proficiency. The preferred method to demonstrate English proficiency is by submitting an acceptable score of 23 or higher on the TOEFL-IBT speaking subtest or a score of 45 or higher on the Test of Spoken English (TSE) before arriving in the United States. The TOEFL-IBT or TSE score should be sent directly to UT Arlington. Score reports submitted directly by the student or those marked "Student Copy" or "Applicant's Copy" are not considered official and will not be accepted by the University. Holding a degree(s) from a U.S. college or university does not exempt from this requirement assistantship applicants who are non-native speakers of English. The TOEFL-IBT and the TSE are administered at TOEFL test centers around the world. See the catalog entry titled Application Documentation Requirements in the Admission Requirements and Procedures section for further information.

A student may also demonstrate English proficiency by submitting an acceptable score of 45 or higher on the UT Arlington Spoken English Assessment (SEA) test. Contact the UT Arlington Testing Services Office for SEA information.

Health Services

605 S. West Street • Box 19329 • 817.272.2771 • www.uta.edu/health_services

UT Arlington Health Services is an on-campus, out-patient facility whose mission is to provide quality, patient-centered health care and promote healthy lifestyles in an accessible, cost-effective manner with respect and compassion.

The UT Arlington Health Center is staffed and equipped to care for most routine health needs. Visits to medical clinic providers are free of charge. A reasonable fee is assessed for services such as medications, x-rays, laboratory tests, women's clinic, and mental health services. Financial support for the Health Center is obtained from student tuition and collections.

Health services are available for all enrolled, fee-paying students. Students who choose not to enroll for a semester but who plan to enroll the following semester must check with the administrative office on eligibility for care. Student employees, such as GTAs, GRAs, TAs, and RAs, may utilize Health Services as students and therefore not pay a fee. Faculty/staff may receive treatment at Health Services for urgent care and other selected services by appointment (817.272.2713) on a fee-for-service basis. Student employees and faculty/staff should ask whether Health Services accepts their UT Arlington employee insurance plan and bring appropriate proof of insurance coverage to their visit.

Staffing: The Health Center staff includes a full-time physician, nurse practitioners, registered nurses, pharmacists, laboratory and x-ray technologists, clinical psychologists, a substance abuse specialist, a health promotion specialist, and support personnel. Health care is available at the Health Center during those times when the University is open. Services are not available during scheduled University holidays. During periods of closure, medical care received from another source will be the patient's financial responsibility.

Services Available

General Medicine: Students with common medical problems are diagnosed and treated on an appointment (817.272.2771) basis. Elective minor surgical procedures such as removal of cysts, moles, and warts, are available. Appointments are required for both the initial evaluation and surgery.

Allergy-Antigen Injections: If patients wish to receive allergy-antigen injections, their allergist should mail the antigen along with details of the allergies and proposed treatment program to Health Services for reference.

Women's Clinic: Health Services diagnoses and treats most diseases of the female reproductive organs. Consultations, contraceptive advice, routine Pap smears, diagnostic tests for sexually-transmitted diseases (STDs), and breast examinations are performed by appointment (817.272.2771).

Mental Health: Psychological and psychiatric assessment and treatment are available to students and faculty/staff by appointment (817.272.2771). Referrals to health agencies or other professionals are made when indicated.

Laboratory: The laboratory is equipped to perform all routine tests. For more sophisticated procedures, specimens are obtained and sent to a reference laboratory for testing.

Pharmacy: The pharmacy dispenses reduced-cost medications and provides medication counseling to students and faculty/staff. The pharmacy accepts the UT System student health insurance and the faculty/staff prescription plan. Health Services will dispense prescriptions from any licensed physician as long as the medication is in the formulary.

X-Ray: Health Services performs routine radiographic studies. After an initial reading by the Health Services physician, the films are sent to a radiologist for final interpretation.

Medical Records: Since medical records are protected under patient/physician confidentiality provisions, only the patient has access to their records. Records will not be released to anyone without written authorization from the patient or as provided by law.

HIV/AIDS: Education and information on HIV/AIDS is available at no charge and may be given in a one-on-one setting or to campus groups. Testing is available for a small laboratory fee and requires pre- and post-test counseling appointments. Clients are referred to appropriate off-campus facilities, if needed. The UT Arlington brochure, "Policy and Guidelines on Human Immunodeficiency Virus Infection (HIV) and Acquired Immune Deficiency Syndrome (AIDS) and Hepatitis B Virus (HBV) and Hepatitis C Virus (HCV)" is available at Health Services. Also see **http://www.uta.edu/health-services/HIV-HBV-HCV.pdf.**

Bacterial Meningitis: Meningitis, a rare but potentially fatal bacterial infection that affects the brain and spinal cord, strikes about 3,000 Americans each year. Information about meningitis and its symptoms is available on the Health Services Web site (**http://www.uta.edu/healthservices.MENINGITIS%20ON%20CAMPUS.pdf**) and in the printed Schedule of Classes.

Substance Abuse Prevention: Health Services houses the Office of Substance Abuse Prevention, which is available to assist students and faculty/staff to make appropriate decisions regarding the use of alcohol and other drugs. This office also provides educational programs and materials concerning alcohol, drugs, sexual health, nutrition, wellness and other health-related topics. The University Policy statement, "Illicit Drugs and Alcohol Abuse," is available at Health Services.

Education: In the spirit of this educational community, it is hoped that students will also use Health Services as a resource for information on health-related issues and preventive medicine.

Patient Rights: Health Services recognizes its responsibility to ensure that every patient, regardless of sex, race, age, beliefs or handicap has the right to be treated with respect, consideration and confidentiality. Patients should take the initiative to communicate their concerns and questions about problems related to their health condition or medication, unclear procedures and previous health history. Patients have the right to seek a second medical opinion, to change primary or specialty physicians, and to be informed of and refuse to participate in experimental research.

Transportation: Health Services is an out-patient facility, and, as such, provides only ambulatory medical services. Patients are responsible for their own transportation to Health Services. For true emergencies, or when the seriousness of the patient's condition is uncertain, call the University Police at 817.272.3003. The police will dispatch officers to the site, and call an ambulance, if needed. These officers are trained in CPR and first aid and can stabilize the patient until an ambulance arrives. This procedure should be followed even when Health Services is open.

Indebtedness: It is the student's responsibility to satisfy indebtedness to Health Services with reasonable promptness. Upon payment, receipts will be issued to be used by the student for submitting claims to personal insurance companies.

Health Insurance: Health Services is not equipped to perform the more extensive diagnostic procedures and services such as those offered by a general hospital. Therefore, all UT Arlington students are strongly urged to have adequate medical insurance coverage. Students on non-immigrant visas are required to carry health insurance and must show proof of coverage at the time of registration. An optional system-wide Student Health Insurance Plan is available through an insurance carrier by contract with the University. For more information about the Student Health Insurance Plan, contact Health Services at 817.272.2771. Insurance brochures and applications are available online at **www.studentresources.com.**

Blood Reserve Fund Plan: In cooperation with Carter BloodCare, UT Arlington sponsors a blood reserve fund plan for students and faculty/staff. To participate in the reserve fund, members are requested to donate regularly during semiannual blood drives held on campus. The release of blood credits is coordinated through Health Services.

Housing

210 University Center • Box 19349 • 817.272.2791 • www.uta.edu/housing

The University owns and operates residence halls, apartments, and houses for UT Arlington students. Residence hall features vary by community. However, all residence hall students enjoy a double or private room on campus that includes Internet, cable TV, and metro phone service, and staff who live on site. Nineteen on-campus apartment communities and 19 houses are available to students as well. For more information about University-owned and managed housing, call 817.272.2791 or visit **www.uta.edu/housing.** Online applications are available on the Web site as well.

Centennial Court, a privately-owned, apartment-style community for UT Arlington students, is also located on the UT Arlington campus. Call 817.436.4800 for more information about Centennial Court.

Multicultural Affairs

Lower Level, University Center • Box 19353 • 817.272.2099

Mission Statement: The mission of Multicultural Affairs is to encourage, foster and support an academic, social and cultural atmosphere conducive to the needs of all students. While advocating cultural diversity and diversity of opinion, Multicultural Affairs embraces individuals from all backgrounds and provides cultural programming, diversity training, recruitment initiatives, and retention strategies to create an environment of academic success and cultural awareness, empowering students with the skills necessary to establish a solid foundation as they prepare to leave The University of Texas at Arlington. To accomplish this mission, Multicultural Affairs provides opportunities to attend cultural programming, seminars, and leadership training. By completing our mission objectives, we enhance the academic and the social skills necessary to become successful members of society.

The motto is "Empower the Leader, Strengthen the Community!"

Multicultural Affairs is composed of two complementary units: Multicultural Affairs and Multicultural Outreach. Together they offer cultural appreciation activities, diversity training workshops, leadership development aimed at creating an environment of academic success and cultural awareness. Rich cultural diversity is reflected in the number and variety of cultural student organizations on campus. Visit the Web site to get connected to more than 30 multicultural student groups that include culturally based, service based, fraternity and sorority, LGBT, dance/performance groups, and spiritually based organizations. As part of the mission of developing leaders prepared to be successful for a global society, the entire campus community is encouraged to take advantage of the services.

All UT Arlington students are encouraged to attend the variety of programs. Activities include guest speakers, special performances, conferences, leadership training. Be sure to enjoy events for:

- Maversity! Diversity leadership training
- Diversity Lecture Series
- Hispanic Heritage Month
- Asian Awareness Month
- Native American Week
- Black History Month
- Semana de Cultura
- Women's History Month
- Diversity Week
- For complete listing visit our online calendar via our Web site

The office hours are Monday-Friday, 8 a.m.-5 p.m. For more information, contact the Office of Multicultural Affairs, at 817.272.2099 or visit **www.uta.edu/multicultural.**

Office of Information Technology (OIT)

B51 Davis Hall • Box 19318 • 817.272.2271 • www.uta.edu/oit

The Office of Information Technology is composed of a diverse group of people working to meet the technological needs of the UT Arlington campus community. OIT provides high-speed data network and computing resources for campus-wide instructional and research activities, as well as University business operations. Computing resources provided by OIT include 10 student computer labs, accounts on multi-user systems that provide access to a web-based file management and file sharing utility called MavSpace, a personal directory on a campus server, compilers, programming tools, e-mail, online documentation, and Internet access and online student services. In-house IT professionals are available to provide assistance to students, faculty and staff.

OIT's 10 on-campus computer labs are strategically located throughout the campus to provide computer resources for all students. Labs are located within the Architecture Building, Business Building, Central Library (three facilities), Engineering Laboratory Building, Fine Arts Building, Nedderman Hall, Ransom Hall and University Hall. All of the facilities are networked and provide access to both UT Arlington systems and the Internet. These facilities allow students laser printing; several feature color printing, scanning, and classroom facilities. The premier facility, Ransom Hall, is open 24 hours a day, seven days a week. This three-story computing facility offers PCs running Microsoft Windows and Apple MacOS. Ransom Hall also features numerous multimedia and networked computer classrooms for teaching purposes.

OIT supports multi-user large centralized as well as distributed client/server computing resources. The large centralized resources consist of:

- A High Performance Computing cluster, dedicated to UT Arlington's researchers, consisting of high speed servers running Red Hat Enterprise Linux. Numerous scientific and engineering applications are available. Accounts on this system are offered to tenured or tenure-track faculty pursuing research for the University.
- Research and teaching activities are supported on servers running Red Hat Enterprise Linux with various compilers, programming tools, utilities, database management systems and statistical analysis packages. Accounts on these systems are available upon request to all UT Arlington students, faculty and staff.

The distributed client/server environment supports thousands of computers located on the desktops of UT Arlington's faculty and staff offices as well as in the student computer labs. Distributed client/server resources consist of many IBM Netfinity and Dell Power Edge servers running Microsoft Windows to serve as Exchange, SQL, SMS, and print/file servers. Together, these servers support the University's e-mail, desktop productivity and departmental applications.

OIT provides a high-speed data network within the UT Arlington campus as well as interconnections to major regional, national and international networks (e.g., Internet, Internet2, THEnet, LEARN, NLR, etc.). Wireless network access is available throughout the public areas of the campus, including central public areas of the five UT Arlington residence halls.

OIT supports the enterprise administrative systems utilized by academic and administrative departments across campus, such as Graduate and Undergraduate Recruiting and Admissions, Academic Advising, Registrar, Student Records, Financial Aid, Student Financials, Graduate School, Police and Bursar. All students, and most faculty and staff, will interact with the enterprise administrative systems through the use of the new MyMav system, a fully functional, totally integrated Web-based system available 24 hours a day, 7 days a week.

Additional information about OIT's computers, network and student computing facilities, as well as access to documentation and staff consultants is available at the Computing Services Help Desk on the first floor of the Central Library (817.272.2208, helpdesk@uta.edu, **www.uta.edu/helpdesk**). All OIT labs and resources are available to current UT Arlington students, faculty and staff.

Office of International Education

Swift Center, 1022 UTA Blvd. • Box 19028 • 817.272.2355 • www.uta.edu/oie

The Office of International Education (OIE) serves as general coordinator of the University's international contacts and programs, and seeks to promote, support and assist international activities throughout the University. The OIE serves more than 2,500 students and 100 scholars in non-immigrant status, U.S. students wishing to study abroad, and academic units who hire non-immigrant faculty and researchers.

The Student and Scholar Services area provides programs, consultation and documentation in the area of immigration and federal regulations. International students may take advantage of counseling on personal, academic, and financial issues through one-on-one sessions or through activities such as international student discussion groups, special workshops on immigration and other topics of interest. The International Programs area plans, organizes, and facilitates mandatory orientations for new international students, an international student discussion group, a friendship program, an international spouse club, an international coffee hour for the UT Arlington community, and workshops of interest to students. The tradition of International Week in the spring is facilitated through the International Student Organization.

The Study Abroad office offers opportunities for credit-bearing study through exchange programs in a number of different countries. Language and cultural studies can earn resident credit undertaken on faculty-led and affiliated programs in more than 40 countries. Students interested in study abroad opportunities, scholarship, travel and work opportunities abroad will find information at the OIE in Swift Center or by visiting **www.uta.edu/oie.**

Student Legal Services

Lower Level, University Center • Box 19355 • 817.272.3771 • www2.uta.edu/attorney

A licensed attorney is employed by the University and available to advise and consult with all currently enrolled students who have paid the Student Service Fee. The attorney may advise the student regarding personal legal problems and concerns.

Areas frequently discussed with the attorney include landlord-tenant disputes, family law matters, contractual controversies, consumer protection questions, traffic accidents and minor criminal matters. Concerns regarding other legal matters may require additional research or referral, at the discretion of the attorney. Academic matters and other problems or concerns involving UT Arlington are addressed in various policies and procedures. Therefore, the attorney may not represent the student in any legal or administrative proceedings or offer advice pertaining to any legal topic involving the University or another enrolled student.

Students must bring their Mav Express card to the appointment for verification of current enrollment.

Testing Services

201 Davis Hall • 817.272.2362 • www.uta.edu/testing

The Testing Services Office provides information to help students identify tests they may need to take for graduate admission or demonstrating proficiency in English.

The Testing Services Office has information on the following tests:

- Admissions Tests: Graduate Record Exam (GRE) and the Law School Admissions Test (LSAT).
- The Miller Analogies Test and the Spoken English Assessment (SEA) may be taken at Testing Services. Specialized tests of aptitudes, interests and abilities are given in Counseling Services.

For more information access **www.uta.edu/testing** or call 817.272.2362.

YWCA Child Development Center

106 W. 6th St. (corner of 6th and Speer) • 817.272.1135

The YWCA Child Development Center is operated by the YWCA of Fort Worth and Tarrant County and offers full-time infant, toddler and preschool child care. Part-time care can be scheduled for children of UT Arlington students. The center is open from 6:30 a.m. to 6 p.m. Sliding scale fees are available for children of UT Arlington students. The center is accredited by NAEYC (National Association for the Education of Young Children). For enrollment information, call 817-272-1135.

Other Student Services

Bursar Services

130 Davis Hall • Box 19649 • 817.272.2172

- Payment of debts to the University
- Student account billing questions
- Enrollment loan applications
- Check cashing services
- Allan Saxe Loan Administration ($50 maximum, 30-day repayment, $0.25 service charge)

Any form of payment (Check, ACH, or Credit Card) that is returned unpaid can result in enrollment withdrawal and the following additional penalties:

- A $25 fee for each returned or cancelled item
- Enrollment withdrawal plus financial responsibility
- A readmission bar
- Grades, official transcript, and diplomas will be held
- Loss of check writing privileges
- All other penalties and actions authorized by law

Check Cashing: A current University identification card and a driver's license are required to cash a personal check for an amount not to exceed $25. A $0.25 Check Cashing Charge will apply.

MavMail and MavMail Newsletter

Every student at UT Arlington is issued a University e-mail account. Students are expected to regularly check their University e-mail account and UT Arlington considers e-mail an official means of communication. Various offices and faculty members may conduct official business via the UT Arlington e-mail account.

In addition to providing students with an e-mail account, UT Arlington sends a weekly newsletter called MavMail to each student's e-mail account. The MavMail newsletter lists campus events, important deadlines, and news related to the campus. Students are expected to read this newsletter.

If you have a question related to the University and do not know where to direct the question, you may contact MavMail. MavMail is designed to provide answers to questions, direct inquirers to the appropriate office(s), and forward suggestions or compliments to the correct individuals or offices. Staff members in the Office of the Provost provide responses after contacting appropriate individuals to gain answers to the questions posed.

Police Department

University Police Building, 700 S. Davis

- Provides motorist assistance and patrols campus 24 hours a day
- Investigates traffic accidents
- Investigates, makes arrests, assists prosecution as necessary
- Conducts crime prevention programs
- Provides public service speakers for classes, clubs and special events
- Recovers, returns found and stolen property
- Provides parking decals, visitor hang tags, and rules and information
- Maintains and operates University shuttle bus services
- Provides escort services for personal safety as requested

The School of Architecture

Dean: Donald Gatzke, M.Arch.
203 Architecture Building • Box 19108 • 817.272.2801 • www.uta.edu/architecture

Programs

Master of Architecture
Master of Landscape Architecture

Mission and Philosophy

The mission of the graduate Architecture and Landscape Architecture programs is to prepare students for sustained contributions and leadership in the design professions. This mission occurs in partnership with the larger University. Together the programs and the University share the aim of educating broadly to the demands of a complex society and, more specifically, to the demands of sophisticated and changing professions.

History and Overview

Architecture was first taught at what is now The University of Texas at Arlington in the early 1940s as a two-year, non-degree program within the School of Engineering. In 1968, with the support of professional architects in the Dallas/Fort Worth area, architecture became a department of the College of Liberal Arts, granting the degree of Bachelor of Science in Architecture. The department prospered, and by 1973 a decision was made to establish a separate school of architecture based on a four-year undergraduate program with a two-year master of architecture program as the professional degree.

By 1978, the School of Architecture and Environmental Design (as it was named in 1974) had an enrollment of more than 1,000 students with 31 full-time faculty. Four programs were included at that time: architecture, interior design, landscape architecture, and city and regional planning. Subsequently, planning moved to the Institute of Urban Studies. In 1989, the school was renamed the School of Architecture.

Architecture and landscape architecture are seen as both the means and the goal of the education we offer. As means, our fields provide a ready path to the larger domain of ideas, history and the human condition. Architecture was seen, after all, as one of the essential liberal arts during the Renaissance. As goals, our fields call upon us to learn specific professional knowledge and skills they focus our attitudes and abilities to produce tangible, concrete things. This demand that we alternately widen and narrow our vision is one of the great strengths of the fields and is one source of their effectiveness as courses of study.

Within a broad curriculum, design as a discipline and a process is emphasized. Students are encouraged to give rich visual and material substance to both theoretical and pragmatic ideas. The context for design at UT Arlington centers on the contemporary urban condition, an approach appropriate for a school at the heart of a diverse, expanding and internationally oriented region like Dallas/Fort Worth.

The school's location at the center of the Dallas/Fort Worth area is especially important for students of architecture and landscape architecture. Almost every cultural, social and professional opportunity is nearby. The urban setting serves as a laboratory to observe the issues that confront current design and to test the proposals put forward. Built work by many of the foremost contemporary architects and landscape architects may be experienced and studied firsthand. Kahn, Pei, Wright, Johnson, Meier, Legoretta, Rudolph, Giurgola, Barnes, Predock, Holl, KPF, Kiley and Walker all have major projects here.

The School of Architecture offers large and up-to-date facilities for research and study. Constructed in 1984, the Architecture Building houses studios, classrooms and offices in addition to a CAD laboratory, a photography studio, a materials shop, a slide library and the Architecture and Fine Arts Library, with 40,000 books and 190 periodicals. The UT Arlington Libraries contains more than 1 million volumes, and students have access to The University of Texas System Library, which house 12 million volumes.

The School of Architecture has an enrollment of approximately 1,000 students, of whom about 160 are graduate students. They come from all parts of the United States and the world; more than 20 percent are international students. About one-third of the graduate students are women.

In terms of recognition of quality, 134 School of Architecture students have received awards in 63 major design or research competitions over the last 10 years, most at the national or international level. This unsurpassed record of competitive accomplishment reflects the education focus of the school. Developed student abilities, along with a tradition of integrating work and academic experience, give UT Arlington graduates ready entry and advancement in the professional world.

Accreditation

The school offers the Master of Architecture and the Master of Landscape Architecture as first professional degrees in the respective programs. The former is accredited by the National Architecture Accrediting Board and the latter by the Landscape Architecture Accrediting Board. The M.Arch. and the M.L.A. taken as second, or post-professional degrees, do not carry professional accreditation.

Scholastic Activity and Research Interests of the Faculty

The faculty–full-time, adjunct and part-time–are involved in their areas of academic and professional interest. This takes many forms: built projects, design studies and competitions, scholarly writing and applied research. This work enriches the teaching mission and provides contributions to the larger community. For a detailed listing of faculty activity, see the Faculty Catalog, available from the School of Architecture.

Special Programs and Opportunities

Visiting faculty members are an integral part of the graduate program at UT Arlington. Noted teachers from other schools in the United States and abroad as well as distinguished practicing designers offer advanced studios and courses each year. Thus, students have access to both a core of permanent faculty members and to a changing spectrum of approaches and values. In addition to on-campus coursework, graduate students may study and travel abroad as an integrated part of the curriculum. The school maintains semester-long, full-credit student exchanges during the academic year with architecture schools at the Universities of Barcelona (Spain), Lund (Sweden), Innsbruck (Austria), and Cottbus (Germany). During the summer, there is a full-credit, five-week travel program to Rome, Florence and Verona, Italy.

Program in Architecture

www.uta.edu/architecture

Area of Study and Degree

Architecture
M.Arch

Master's Degree Plans

Thesis, Thesis Substitute (Design Thesis)
and Non-Thesis (Advanced Studio)

Dean, School of Architecture

Donald Gatzke
203 Architecture, 817.272.2801

Graduate Advisor

David Jones
203 EB Architecture, 817.272.2801

Graduate Faculty

Professors

Baum, Ferrier, Hamilton, Kuhner, McDermott, Mehta, Price

Associate Professors

Boswell, Gintole, Guy, Maruszczak, Youssefzadeh

Dean Emeritus

G. Wright

Professor Emeritus

R. McBride

Objective

The purpose of the Master of Architecture program is to educate for ultimate leadership positions within the architecture profession.

Design is emphasized as central to the discipline of design deeply informed by history, theory, technology, and the broader cultural setting. Design studios, lecture courses, seminars, and workshops develop the critical mind as well as the visual sensibility.

Architecture and its practice exist within the social fabric. Thus discourse and communication are a vital part of the educational process. Through case studies in studios and courses, students learn to present ideas, and to use and give commentary. Visiting faculty leading practitioners and teachers from other schools provide a rich connection to the world of building and to a variety of views. In addition, international student exchange programs, study-travel courses, and numerous internship opportunities in the Dallas-Fort Worth area connect the learning of architecture with the wider world.

In the United States, most state registration boards require a degree from an accredited degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes two types of degrees: the Bachelor of Architecture and the Master of Architecture. A program may be granted a five-year, three-year, or two-year term of accreditation, depending on its degree of conformance with established educational standards.

Master's degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree, which, when earned sequentially, comprise an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree. The University of Texas at Arlington does not offer the Bachelor of Architecture degree.

The professional program leading to the Master of Architecture degree consists of a sequence of coordinated core courses that introduce and develop architectural knowledge; this is followed by a flexible array of more advanced and speculative course options. The preparation each student brings determines where, in this progression from introductory to advanced work, the program is entered. Path A is for those with a baccalaureate degree but no specific background in architecture; this sequence normally takes 3.5 years to the M.Arch. Path B is for those with a four-year undergraduate baccalaureate degree with a major in architecture; this sequence assumes satisfactory core studies and consists of about two years of more advanced professional studies. Path C is for those who already hold an accredited professional degree in architecture and who wish for a second professional degree; at least one year of advanced work is required.

Admissions Requirements

Unconditional Admission

Path A: For unconditional admission to the Path A program, the candidate must meet the following requirements:

- B.S. or B.A. Degree - Hold a 4-year B.S. or B.A. degree from an accredited program.
- GPA of 3.0 - Have a GPA of 3.0 as calculated by the Graduate School.
- GRE score of 1000 - Have a minimum total score of 500 in the verbal and 500 in the quantitative portions of the Graduate Record Exam (GRE).
- 3 Letters of recommendation
  Submit three letters of recommendation from sources who are familiar with the applicant's academic record, preferably former

professors. (For applicants who have been out of school for an extended period, letters of recommendation may be from professional sources if academic ones are no longer available).

- 200 Word Essay
  Submit a short 200-word personal statement providing evidence of professional or academic goals consistent with the Architecture Program.
- TOEFL Score of 550
  For applicants whose native language is not English, a minimum score of 550 on the Test of English as a Foreign Language (TOEFL), or the equivalent score on the computer based test. For otherwise highly qualified candidates, this requirement may be eased.
- Portfolio Submission (Optional)
  Submission of a design portfolio is not required. If a candidate does have a portfolio of creative work showing freehand drawings or sketches, painting, graphic design, architectural or furniture design, he/she is encouraged to submit it.

Path B: For unconditional admission to the Path B program, the candidate must meet the above requirements, and in addition must:

- Portfolio Submission (required)
  Submit a portfolio of design work and/or professional involvement, which shows evidence of design capability on a level expected in the graduate program as determined by the Graduate Architecture Admissions Committee. (Design work produced in an office as an employee carries less weight because of the difficulty in determining the applicant's exact contribution to the work shown). The best indication of probable success in the program is the quality of work demonstrated in the portfolio.

Path C: For unconditional admission to the Path C program, the candidate must meet the requirements of the Path A and Path B programs (except the requirement of a B.A. or B.S. degree) and must:

- Professional Architecture Degree
  Have a professional architecture degree (B.Arch. or M.Arch. or the international equivalent) from an accredited architecture program.

Probationary Admission

Path A: Candidates who do not meet the criteria for unconditional admission to Path A, will be considered for probationary admission in which they will be required to maintain a grade of B or better in the first 12 credit hours of courses in the program. To be considered for probationary acceptance, the candidate must perform well on four of the following six criteria:

- Undergraduate performance in relevant courses
- Work experience
- GPA
- GRE
- Portfolio review (optional)
- Letters of recommendation

Path B: Candidates who do not meet the criteria for unconditional admission to Path B may be considered for probationary admission in which they will be required to maintain a grade of B or better in the first 12 credit hours of courses in the program. And/or they may also be required to take one or more Path A and/or fourth year design studio as determined by the graduate advisor on review of their portfolio before continuing with the Path B design studio sequence.

To be considered for probationary acceptance, the candidate must perform well on three of the following five criteria:

- Undergraduate performance in relevant courses
- GPA
- GRE
- Letters of recommendation
- Portfolio review

Path C: Candidates who do not meet the criteria for unconditional admission to Path C, may be considered for probationary admission in which they will be required to maintain a grade of B or better in the first 12 credit hours of courses in the program. To be considered for probationary acceptance, the candidate must perform well on three of the following five criteria:

- Performance in relevant courses in a program leading to the B.Arch or M.Arch degree.
- GPA
- GRE
- Letters of recommendation
- Portfolio review

Note: Applicants whose native language is not English who do not meet the program's minimum TOEFL score, may be asked to complete extramural training in English, as approved by the program and the Graduate School.

Provisional Admission

An applicant unable to supply all required documentation prior to the submission deadline but who otherwise appears to meet admission requirements may be granted provisional admission. All missing documentation must be received before the end of the first semester of study.

Deferred Admission

A deferred admission may be granted when a file is incomplete or when a denied decision is not appropriate.

Denial of Admission

Candidates who do not satisfy the requirements for probationary admission will not be admitted.

Graduate Teaching Assistant

To be considered for a Graduate Teaching Assistant position, the candidate must be admitted without provisional conditions. Candidates whose native language is not English must submit an acceptable score on the Test of Spoken English (TSE-A) before arriving in the United States. GTA positions in architecture are limited and are very competitive.

Fellowships

To be considered for a Dean's Fellowship, the candidate must have a favorable review in most of the evaluation criteria. Candidates must be new students coming to UT Arlington, must have a GPA of 3.0 in their last 60 undergraduate credit hours and any graduate credit hours, and must be enrolled in a minimum of 6 hours in both long semesters to retain their fellowships. Fellowships in architecture are limited and very competitive.

Prospective students are strongly encouraged to contact the Graduate Advisor and discuss their options, the admission process, and how the M.Arch program may fit in their professional plans. Students are also invited to visit the School, sit in on classes, and meet faculty and students at the School of Architecture.

Degree Requirements

Professional Degree Program: Path A (3.5 years)

For applicants holding a baccalaureate (B.A., B.S.) degree in a subject outside architecture, such as liberal arts, sciences, business, or another profession.

A minimum of 104 credit hours in architectural design, theory, and practice is required of Path A candidates for the professional degree in architecture (M.Arch). Due to the rigor of the program (not unlike any other professional school, law or medicine), students entering this program are advised to discontinue outside employment.

Advancement in Professional Degree Program Path A is predicated upon successful and timely completion of required coursework as well as an annual review of the student's portfolio of design work by the Directors Group of the Architecture Program.

In addition to completing an introductory curriculum beginning in the summer of the first semester of enrollment, students must also complete the Path B core curriculum of 39 credit hours. The core curriculum of this course of study is ARCH 5325, 5326, 5329, 5331, 5333, and 24 hours of advanced studio. Students approved by the Directors Group to substitute a design thesis for the last semester of the required studio sequence must also take ARCH 5363 prior to enrollment in ARCH 5693.

Electives must include at least one course from each of the following categories of courses offered by the school: (a) history and theory (b) technology and practice, and (c) allied disciplines (landscape architecture, urban design, housing, and interior design).

Suggested Course Sequence: Path A

First Year

Summer Semester
5591 Design Studio I
5301 Principles of Architecture
5342 Architectural Graphics I

Fall Semester
5592 Design Studio II
5323 Construction I
5343 Architectural Graphics II
5303 History of Architecture I

Spring Semester
5593 Design Studio III
5324 Architectural Structures I
5304 History of Architecture II
Elective 3 hours

Second Year

Summer Semester
5594 Design Studio IV
5329 Computers and Design
(or approved alternative)

Fall Semester
Advanced Studio 6 hours
5327 Architectural Structures II
5325 Environmental Controls I
Elective 3 hours

Spring Semester
Advanced Studio 6 hours
5328 Architectural Structures III
5326 Environmental Controls II
Elective 3 hours

Third Year

Fall Semester
Advanced Studio 6 hours
5331 Professional Practice
5363 Design Research
(for design thesis option)
5333 Construction II
Elective 3 hours
(Thesis or advanced studio options)

Spring Semester
Advanced Studio 6 hours
or
5693 Design Thesis
or
5698 Thesis
Electives 6 hour

Professional Degree Program: Path B (2 years)

For applicants holding a baccalaureate degree with a major in architecture. Placement in the graduate curriculum may be adjusted on the basis of previous academic and professional work.

A minimum of 54 credit hours is required for the thesis option or 57 for the design thesis and advanced studio options.

The core curriculum for this course of study is ARCH 5325, 5326, 5327, 5328, 5329, 5331, 5333, 18 hours of advanced studio, and 5693 or 5698 or advanced studio. Students in design thesis option must take ARCH 5395 prior to enrollment in ARCH 5693.

Electives must include at least one course from each of the following categories of courses offered by the School of Architecture: (a) history and theory (b) technology and practice and (c) allied disciplines (landscape architecture, urban design, housing and interior design).

Suggested Course Sequence: Path B

First Year

Fall Semester
Advanced Studio 6 hours
5325 Environmental Controls I
5333 Construction II
5327 Structures II

Spring Semester
Advanced Studio 6 hours
5326 Environmental Controls II
5329 Computer and Design
(or approved alternative)
5328 Structures III

Second Year

Fall Semester
Advanced Studio 6 hours
5331 Professional Practice
5395 Issues in Contemporary Arch.
(for design thesis option)
Elective 3 hours
6 hours (advanced studio option)

Spring Semester
5698 Thesis
or
5693 Design Thesis
or
Advanced Studio 6 hours
Electives 6 hours

Post-Professional Degree Program: Path C (1 year)

For applicants holding a previous professional degree in Architecture (B.Arch) from an accredited program. The M.Arch, as a second rather than a first professional degree, does not receive NAAB Accreditation.

Thirty credit hours are required of students in Path C with thesis while 33 hours will be required of students with design thesis or advanced studio options.

A minimum of 18 hours is required in architectural program courses including six hours of history/theory as well as thesis, design thesis, or advanced studio. Students are also required to take an advanced studio which may be waived by student request if design proficiency or equivalent experience has been demonstrated. The remainder of the work will be arranged with and approved by the Graduate Advisor to suit the interests of the student. Courses of study provide for an area of specialization or for advanced general studies.

Suggested Course Sequence: Path C

Fall Semester
History/Theory 3 hours
Advanced Studio 6 hours
5363 Design Research
(for design thesis option)
Elective 3 hours

Spring Semester
History/Theory 3 hours
Advanced Studio 6 hours
or
5693 Design Thesis
or
Electives 9 hours (for design thesis or Advanced studio options)
6 hours (for thesis option)

The School of Architecture offers international study programs in Rome, Italy, Barcelona, Spain, Innsbruck, Lund, Sweden and Cottbus, Germany. The Rome Program, conducted for five weeks each summer by UT Arlington faculty, is open to upper division and graduate students and may be used to satisfy history and elective requirements. The Barcelona, Innsbruck and Lund programs are semester-long exchange programs with universities in these cities, with the normal expectation of both studio and elective credit.

M.C.R.P. and M.Arch Dual Degree Program

Students in this dual program may earn both the Master of City and Regional Planning and the Master of Architecture degrees in a curriculum of 87 semester credit hours. Applicants must meet the admission requirements of both the M.C.R.P. and the M.Arch programs. City and Regional Planning students wishing to earn the M.Arch degree will be required to take Path A in the Architecture Program unless they have earned an undergraduate degree in architecture which will allow CIRP applicants to take Path B. Programs of study will follow both master's programs, with all of the 15 credit hours of electives in the M.Arch program to be taken in the M.C.R.P. program. In addition to the 36 credit hours of architectural core courses, the remainder of coursework will be in the City and Regional Planning program in the School of Urban and Public Affairs with a required thesis proposal and programs of work to be jointly approved by the City and Regional Planning Program and the Architecture Program. A thesis supervisor should be selected from CIRP or the School of Architecture, and committee members should be selected from both faculties.

Course selection and programs of study should be designed with the assistance of the Graduate Advisors in both programs. Only in special instances may students select the thesis substitute plan of the M.C.R.P. program. The successful candidate will be awarded both degrees rather than one joint degree.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Architecture (ARCH)

5191. CONFERENCE COURSE (0-0). Special subjects and issues as arranged with individual students and faculty members. May be repeated for credit. Graded P/F/R.

5301. PRINCIPLES OF ARCHITECTURE (3-0). A survey study of the interrelationships between society, culture, and architecture. Concurrent enrollment of ARCH 5591 and 5342 required.

5302. LYRICISM IN ARCHITECTURE (3-0). Concepts and models of architecture that express a philosophy concerning feelings, intuition, and creative spontaneity, emphasizing flowing rhythms and nature-inspired forms.

5303. HISTORY OF ARCHITECTURE I (3-0). History of architecture from pre-history through the Middle Ages. Prerequisite: permission of the instructor.

5304. HISTORY OF ARCHITECTURE II (3-0). History of Architecture from the Renaissance to the present. Prerequisite: ARCH 5303 and permission of the instructor.

5305. CITY OF ROME (3-0). History, topography, and monuments of Rome and its environs from its legendary founding in 753 B.C. until the 20th Century, with special emphasis on imperial and papal Rome.

5306. URBAN DESIGN (3-0). Urban design theory, method, and implementation using contemporary and historic examples.

5309. CITY OF LONDON (3-0). History, topography, and monuments of Greater London from before the Roman colonization until the 20th Century, emphasizing London's growth into a world capital since the Great Fire of 1666.

5310. AMERICAN ARCHITECTURE TO 1917 (3-0). Detailed consideration of the architecture of the United States from the 17th Century until World War I, with special attention to the great and little masters of the field. Prerequisite: ARCH 2303 and 2304.

5311. ARCHITECTURAL THEORY (3-0). A review and analysis of the concepts, philosophy, ideology, and models that promulgated 20th Century architectural design. May be repeated for credit as topics change. Prerequisite: permission of the instructor.

5315. TOPICS IN ARCHITECTURAL HISTORY (3-0). Courses to explore and present selected topics in architecture and related fields of the Ancient Mediterranean, the Classical World, the Middle Ages, the 19th Century, and the Non-Western Traditions. May be repeated for credit as topics change. Prerequisite: ARCH 2303 and 2304.

5316. MODERN ARCHITECTURE I 1890 TO 1945 (3-0). Origins and development of Modern Architecture in Europe from 1890 to World War II, and its further evolution in Europe and America from 1918 to 1945. Prerequisites: ARCH 2303 and 2304.

5317. MODERN ARCHITECTURE II 1945 TO PRESENT (3-0). Architectural developments in Europe, Asia, and America since World War II. Prerequisites: ARCH 2303 and 2304.

5319. HOUSING DESIGN (3-0). Evolution of housing from the end of the 19th Century to the present with particular emphasis on contemporary design methods, techniques and solutions.

5321. ADVANCED COMPUTER APPLICATIONS (3-0). The study and application of specialized computer programs in environmental design. Prerequisites: ARCH 4329 or 5329 or the equivalent, and permission of the instructor.

5323. CONSTRUCTION I (3-0). Construction materials and structural concepts as used in buildings. Prerequisite: permission of the instructor.

5324. ARCHITECTURAL STRUCTURES I (3-0). Statics, strength of materials and simple structural systems in buildings. Prerequisite: permission of the instructor.

5325. ENVIRONMENTAL CONTROL SYSTEMS (3-0). Illumination, acoustics, climate controls, mechanical and electrical systems, and their significance in the total design.

5326. ENVIRONMENTAL CONTROL SYSTEMS (3-0). Continuation of ARCH 5325.
5327. ARCHITECTURAL STRUCTURES II (3-0). Continuation of ARCH 5324 with emphasis on structural theory and systems in wood and steel. Prerequisite: ARCH 5324.
5328. ARCHITECTURAL STRUCTURES III (3-0). Continuation of ARCH 5327 with emphasis on structural theory and systems in masonry and reinforced concrete. Prerequisite: ARCH 5327.
5329. COMPUTERS AND DESIGN (3-0). Computer aided design, drafting and graphic techniques as applied to architecture. Prerequisite: permission of the instructor.
5330. COMPARATIVE STRUCTURES (3-0). Comparative analysis and design of structural systems and construction techniques, including architectural and economic determinants. Prerequisite: ARCH 5328 or permission of the instructor.
5331. PROFESSIONAL PRACTICE (3-0). Survey of the administrative functions, and the ethical and legal responsibilities of the architect.
5332. ENERGY USE AND CONSERVATION IN ARCHITECTURE (3-0). Concepts of the efficient use and conservation of energy and their embodiment in the built environment. Prerequisite: permission of the instructor.
5333. CONSTRUCTION II (3-0). Advanced construction assemblies and methods, including the principles of cost control. Prerequisites: ARCH 5670.
5335. ADVANCED PROFESSIONAL PRACTICE II: MARKETING DESIGN SERVICES (3-0). A study of the strategies and methods for marketing professional services. Presented as case studies of architecture, interior design, and landscape architecture firms.
5337. SOILS AND FOUNDATIONS (3-0). Soil classifications, field and laboratory identification, physical properties and load-bearing characteristics, retaining walls and foundations. Prerequisite: ARCH 5328 or permission of the instructor.
5342. ARCHITECTURAL GRAPHICS I (0-2). Architectural drawing, perception, projections, and three-dimensional representation. Concurrent enrollment in ARCH 5591 is required.
5343. ARCHITECTURAL GRAPHICS II (2-4). A continuation of ARCH 5342 with emphasis on more advanced techniques: composition, tone, shades and shadows, and color.
5344. CONCEPTUAL DRAWING (0-0). Seminar to explore aspects of conceptual drawing for the architect and the relationship of design ideas in the drawing process.
5346. CONSTRUCTION DRAWINGS I (2-4). The techniques of building construction, the communication of technical information, and the process of preparing contract drawings for construction.
5348. PRINCIPLES OF ARCHITECTURAL PHOTOGRAPHY (2-4). The use of photography as an investigative and presentation medium in architecture. Emphasis on composition in black and white technique.
5350. VESSELS (3-0). The design of objects for the post-Industrial Age, including vehicles, furniture, jewelry, household objects, and clothing.
5351. WILDERNESS: A CONDITION OF MIND (3-0). Changing conceptions of wilderness in Western thought, from ancestral prejudices to recent, revolutionary appreciation. Literary and visual documentation.
5353. PERSPECTIVAL SPACE (3-0). Issues concerning the aspects and potential of perspective space will be presented in a lecture and discussion format. Readings and the making of perspective drawings will be used to explore the medium of perspective vision for its cultural implications as well as depiction.
5355. HEMISPHERES (3-0). The study and analysis of Japanese arts and contemporary culture. The arts of ceramics, painting, calligraphy, and sculpture are examined. Prerequisite: departmental approval.
5363. DESIGN RESEARCH (3-0). Seminar directed toward the understanding of research methods and the programming of an independent design project, leading to the thesis substitute. Graded R.
5370. ADVANCED DESIGN STUDIO (0-4). Studio course in the generation and development of architectural ideas in formal and environmental contexts. May be repeated for credit. Two of these courses are equivalent to ARCH 5670.
5381. PRACTICUM (3-0). Internship program including work done through an approved architect's office, designed to give practical experience leading to a broader knowledge of the profession. Placement in offices must be approved, and in some cases may also be arranged by the school. Students may enroll in 5381 for half-time employment or 5681 for full-time employment. Students enrolled in Practicum may also participate in the Intern Development Program of the American Institute of Architects. No more than six total credit hours in Practicum are allowed for degree. Graded P/F/R.
5391. CONFERENCE COURSE (3-0). Special subjects and issues as arranged with individual students and faculty members. May be repeated for credit. Graded P/F/R.
5395. TOPICS IN ARCHITECTURE (3-0). Studio, lecture or seminar courses to explore and present special topics in architecture and environmental design. May be repeated for credit as topics change.
5591. DESIGN STUDIO I (0-6). An intensive studio course in architectonic theory and operations. Emphasis on analytic, conceptual, and manipulation procedures.
5592. DESIGN STUDIO II (0-6). Continuation of ARCH 5591. Studio course emphasizing the interrelationship of formal/spatial ideas, use, and the building fabric. Prerequisite: ARCH 5591.
5593. DESIGN STUDIO III (0-6). Continuation of ARCH 5592. Studio course emphasizing the interrelationship of formal/spatial ideas, use, and the building fabric with special attention to the urban context. Prerequisite: ARCH 5592.
5594. DESIGN STUDIO IV (0-6). Continuation of ARCH 5593. Emphasis on complex building designs in urban environments. Off campus study may be substituted.
5670. ADVANCED DESIGN STUDIO (0 - 9). Studio course emphasizing the analysis and design of building aggregations within the urban context. May be repeated for credit.
5672. ADVANCED DESIGN STUDIO COMPREHENSIVE (0-9). Comprehensive studio course emphasizing the analysis and design of building aggregations within the urban context. May be repeated for credit.
5681. PRACTICUM (6-0). Internship program including work done through an approved architect's office, designed to give practical experience leading to a broader knowledge of the profession. Placement in offices must be approved, and in some cases may also be arranged by the school. Students may enroll in 5381 for half-time employment or 5681 for full-time employment. Students enrolled in Practicum may also participate in the Intern Development Program of the American Institute of Architects. No more than six total credit hours in Practicum are allowed for degree. Graded P/F/R.
5691. CONFERENCE COURSE (6-12). Special subjects and issues as arranged with individual students and faculty members. May be repeated for credit. Graded P/F/R.
5693. DESIGN THESIS (6 - 0). Individual study project conducted by a supervising committee, with program and statement of intent to be filed with the Graduate Advisor during the previous semester. Graded R. Prerequisite: ARCH 5363
5695. TOPICS IN ARCHITECTURE (3-0). Studio, lecture or seminar courses to explore and present special topics in architecture and environmental design. May be repeated for credit as topics change.
5698. RESEARCH THESIS (6 - 0).

Program in Landscape Architecture

www.uta.edu/architecture

Area of Study and Degree
Landscape Architecture
M.L.A.

Master's Degree Plan
Thesis

Dean, School of Architecture
Donald Gatzke
203 Architecture, 817.272.2801

Director, Landscape Architecture
Pat D. Taylor
203B Architecture, 817.272.2801

Graduate Advisor
Pat D. Taylor
203B Architecture, 817.272.2801

Graduate Faculty
Professor
Robinette

Associate Professor
Taylor

Assistant Professors
Hopman, Ozdil

Adjunct Assistant Professors
Archambeau, Baldwin, Bass, Fain, Hocker, Richards, Thompson

Appropriate members of the graduate faculty from Architecture

Objective

The mission of the Program in Landscape Architecture is to educate for ultimate leadership in the landscape architecture profession. This mission requires fostering rigorous scholarly inquiry of the discipline, and the preparation of knowledgeable practitioners.

The Program in Landscape Architecture has the dual objectives of providing students with a core of design and technical skills in combination with experiences in pure and applied research. This duality prepares students for identifying and solving problems in the profession through design and research, and it is a program focus. The Program in Landscape Architecture also prepares students to enter practice in private, public, academic, and research organizations.

Student preparation is enhanced by specialized coursework taken inside and outside of landscape architecture and by the topic of one's thesis. Students are directed to select thesis committee members early-on and to select specialized courses which reinforce students' areas of primary interest in landscape architecture.

The Program in Landscape Architecture is fully accredited by the Landscape Architectural Accreditation Board of the American Society of Landscape Architects. Graduates from the program are qualified to sit for the Landscape Architecture Registration Exam which, when successfully passed, qualifies individuals to practice as landscape architects in the State of Texas.

Admissions Requirements

Applicants must meet the general requirements of the Graduate School. A personal interview with the Director, Graduate Advisor or members of the landscape architecture faculty is recommended. Three letters of recommendation are required, and it is suggested that at least two of the letters come from former educators or academic contact. Applicants also are required to submit scores from the Graduate Record Exam (GRE). Average GRE scores of successful applicants since 1998 have been approximately 550 Verbal and 550 Quantitative. Also required is a grade point average (GPA) of 3.00 as calculated by the Graduate School.

Applicants holding first professional degrees in landscape architecture, or degrees related to landscape architecture (such as architecture, engineering, environmental design, horticulture, interior design, planning, and the like) are required to submit portfolios reflecting the applicants' professional and/or academic experiences and interests. Portfolios are assessed according to proficiency in design, presentation and layout, technical skills, and content, similar to criteria used in design studios.

Applicants who have a weakness in one of the criteria for admission can enhance their credentials with strengths in the remaining criteria.

Applicants can be admitted according to four conditions: Unconditional; Provisional; Probationary; and, Deferred. Applicants who do not meet the criteria of one of these conditions will be denied admission to the program.

Unconditional Admission

Applicants must possess a bachelor's degree from an accredited college or university. Transcripts from all previous college or university work, along with scores from the Graduate Record Exam (GRE), and three letters of recommendation are required of all applicants. In addition, applicants should have a minimum Grade Point Average (GPA) of 3.0, as calculated by the Graduate School. Applicants holding the first professional degree in landscape architecture, or a related field, must submit a portfolio.

Provisional Admission

Those who have submitted their applications forms, but whose packets are incomplete, can be admitted provisionally if their GPA meets minimum requirements, and if the program and the Graduate School have received official transcripts. In this case, incomplete materials could include letters of recommendation, GRE scores, and/or portfolios.

Probationary Admission

Those who have weaknesses in no more than two of the Degree Requirements (letters of recommendation, GRE scores, and GPA), can be admitted on probation, with the condition that they make no less than a B in the first 12 hours of coursework in landscape architecture. Such students must complete no fewer than 9 credits during the semester in which they are on probation.

Deferred Admission

Those who have weaknesses in no more than two of the Degree Requirements (letters of recommendation, GRE scores, and GPA), and/or who have not submitted all of the materials required for unconditional admission, can have their applications deferred for one semester, until outstanding requirements and criteria are met.

International Student Admission

International applicants must meet the Degree Requirements (letters of recommendation, GRE scores, and GPA), and must be admitted in one of the admission categories described above. In addition, applicants whose native language is not English must have a demonstrated speaking ability in English, and they must meet the program's minimum required score of 575, or the equivalent score on the computer based test, on the Test of English as a Foreign Language (TOEFL). International applicants who do not meet the program's minimum TOEFL score, must complete extramural training in English, as approved by the program and the Graduate School.

Graduate Teaching/Research Assistantships

To be considered for a Graduate Teaching or Research Assistantship, the candidate must be admitted without provisional conditions

Fellowships and Scholarships

To be considered for a Dean's Fellowship, or for scholarships in the program the candidate must have a favorable review in most of the evaluation criteria. Fellowships and Scholarships in landscape architecture are limited and very competitive. Candidates must be new students coming to UT Arlington, must have a GPA of 3.0 in their last 60 undergraduate credit hours and any graduate hours, and must be enrolled in a minimum of 9 hours in both long semesters to retain their fellowships or scholarships.

Degree Requirements

First Professional Degree Program

For students holding a college degree in a field other than design, some prerequisite courses usually are required such as design, plant materials, technology, drawing, theory, and history. The extent and number of such courses depends upon the student's previous college experience and demonstrated skills.

The core curriculum in the Program in Landscape Architecture prepares students holding a college degree in a field other than landscape architecture or a related design discipline to complete the requirements for the first professional degree in landscape architecture. The core curriculum also provides students with the basic equivalent of a bachelor's degree in landscape architecture. For full-time students with degrees from other non-design disciplines, the core usually takes three semesters to complete. For all students, electives must be concentrated in a specialization or interest area which supports the student's thesis and/or the student's professional objectives.

An approved degree plan must be submitted no later than the start of the student's second semester of graduate work.

The following coursework is a suggestion to meet the program mission. Each student will be counseled, based upon interests and background, to develop an appropriate degree plan.

The Core Curriculum

Semester 1
LARC 5661 Design Studio I
LARC 5320 Communications for Landscape Architects
LARC 5301 Site Planning and Development Process
LARC 5330 Plant Identification and Ecology
Total Credit Hours: 15

Semester 2
LARC 5662 Design Studio II
LARC 5382 Urban Design Seminar
LARC 5312/5313 Comprehensive History and Theory
LARC 5331 Planting Design
Total Credit Hours: 15

Semester 3
LARC 5663 Design Studio III: Site Planning
Landscape Architecture Elective (3 hours)
LARC 5313 History and Theory of Landscape Architecture II
LARC 5321 Advanced Communications (or approved substitute)
Total Credit Hours: 15

After completing 45 credit hours, the first professional degree student is evaluated by means of an academic review and portfolio review by the Graduate Studies Committee. The committee identifies areas of strength and weakness in the student's performance and recommends appropriate action.

Upon completion of the three core semesters, the student is required to develop an area of specialization or primary interest. The student must consult with faculty advisors to complete this step, which includes a preliminary agreement between student and faculty advisors regarding the specialization or primary interest and the appropriate research method to support it. If a student is interested in Advanced Landscape Architecture, for example, a probable program of study could look like this:

Advanced Landscape Architecture

Semester 4
LARC 5664 Design Studio IV (CAD experience required)
LARC 5340 Professional Practice
LARC 5380 Research Methods in Landscape Architecture
LARC 5302 Land Development Planning
Total Credit Hours: 15

Semester Between Academic Year 2 and 3
LARC 5681 Professional Practicum or
LARC 5695 Independent Study Abroad or
LARC 5683 Independent Study Area of Specialization or
Controlled Electives

LARC 5660 Enrichment Design Studio (if necessary)
Total Credit Hours: 6

Semester 5
LARC 5665 Design Studio V
Advanced or Independent Study in Landscape Architecture (9 hours)
Total Credit Hours: 15

Semester 6
LARC 5698 Thesis
LARC 5294 Master's Comprehensive Examination
Advanced or Independent Study in Landscape Architecture (3 hours)
Total Credit Hours: 11

Minimum Credit Hours Required for Graduation: 92

Students pursuing other primary areas of interest also must consult with appropriate faculty advisors for approval.

Advanced Standing

Students from backgrounds other than landscape architecture or its related fields must complete the 92 credits required in the curriculum. Students with degrees and/or professional experience in fields related to landscape architecture (such as architecture, engineering, environmental design, horticulture, interior design, planning and the like) may apply for advanced standing, allowing them to enter the academic phase (second year) of the curriculum. Advanced standing in these cases requires a minimum of 62 total credit hours for graduation.

Students with first professional degrees in landscape architecture also may apply for advanced standing, allowing them to enter the research (third year) phase of the curriculum. Advanced standing in these cases requires a minimum of 30 total credit hours for graduation.

Minimum Program for Advanced Standing

(Students from Fields of Study Related to Landscape Architecture)

Semester 1
LARC 5663 Design Studio III
LARC 5330 Plant Identification and Ecology
LARC 5321 Advanced Communications (or approved substitute)
LARC 5312/5313 Comprehensive History and Theory
Total Credit Hours: 15

Semester 2
LARC 5664 Design Studio IV (CAD experience required)
LARC 5342 Landscape Technology II
LARC 5332 Planting Design
LARC 5302 Land Development Planning
Total Credit Hours: 15

Semester Between Academic Year 1 and 2
LARC 5681 Professional Practicum or
LARC 5695 Independent Study Abroad or
LARC 5683 Independent Study Specialization
Total Credit Hours: 6

Semester 3
LARC 5665 Design Studio V
LARC 5340 Professional Practice
LARC 5380 Research Methods in Landscape Architecture
Study in primary area of interest (3 hours)
Total Credit Hours: 15

Semester 4
LARC 5698 Thesis
LARC 5294 Master's Comprehensive Examination
Study in specialization (3 hours)
Total Credit Hours: 11

Minimum Credit Hours Required for Graduation: 62

Minimum Program for Advanced Standing

(Students with First Professional Degrees in Landscape Architecture)

Semester 1
LARC 5665 Design Studio V
LARC 5380 Research Methods in Landscape
Architecture Specialization Option Courses (6 hours)
Total Credit Hours: 15

Semester 2
LARC 5698 Thesis
LARC 5294 Master's Comprehensive Examination
LARC 5302 Land Development Planning
Specialization Option Courses, Independent Study (4 hours)
Total Credit Hours: 15

Minimum Credit Hours Required for Graduation: 30

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Landscape Architecture (LARC)

5191. CONFERENCE COURSE IN LANDSCAPE ARCHITECTURE (1-0). Special subjects and issues in landscape architecture that may be studied independently under faculty supervision. May be repeated for credit.

5294. MASTERS COMPREHENSIVE EXAMINATION (2-0). Must be taken concurrently with Thesis. Directed study, consultation, and comprehensive examination of coursework, leading to and including the thesis. Oral presentation required. Required of all Master of Landscape Architecture students in the semester in which they plan to graduate.

5301. SITE PLANNING AND DEVELOPMENT PROCESSES (3-0). Presents the processes and practices of site planning and development, including site inventory, analysis, and assessment of potential building sites. Students examine the natural, cultural, and social systems that affect design decisions, as well as the language and literature of landscape architecture.

5302. LAND DEVELOPMENT PLANNING (3-0). The process of land development planning for landscape architects. Detailed expansion of LARC 5301. Uses case studies in land development planning to instruct students in the environmental, economic, legal, and visual issues associated with the land planning process.

5312. HISTORY AND THEORY OF LANDSCAPE ARCHITECTURE I (3-0). Traces landscape planning and design from pre-history through Egyptian, Roman, Islamic, and Medieval gardens to Renaissance, Italian, French, and English landscape approaches, culminating in the mid-19th century. Relates landscape design to the societal, cultural, technological, and belief systems of the period.

5313. HISTORY AND THEORY OF LANDSCAPE ARCHITECTURE II (3-0). The contemporary history of the profession from Andrew Jackson Downing to present day. The growth and development of the American Society of Landscape Architects (ASLA), professional education, the environmental movement, large scale regional planning, and significant landscape architectural projects of the past century.

5320. COMMUNICATIONS FOR LANDSCAPE ARCHITECTS (2-4). Primary class for the development of graphic and communication skills in landscape architecture. Provides a method for transferring conceptual ideas into legible graphic presentations. Should be taken concurrently with LARC 5661 Design Studio I.

5321. ADVANCED COMMUNICATIONS (2-4). Presentation techniques; expansion on graphic thinking and communication presented in LARC 5320.

5323. STUDIO TEACHING (0-9).

5324. LANDSCAPE ARCHITECTURE AND ENVIRONMENTAL ART SEMINAR (2-2). Siting and creating works of art; analysis of the creative processes of the two different-yet-related disciplines; case studies of built works. Communication of ideas through environmental media.

5330. PLANT IDENTIFICATION AND ECOLOGY (2-4). Examines the ecology, growth characteristics, and design applications of plant materials. Local field trips are required.

5331. PLANTING DESIGN (2-4). Design applications of plant material. Students apply the design problem-solving approach to the detailed aspects of planting design and complete a progressively-more-difficult series of problems to practice techniques and methods of plant manipulation that encompass both the aesthetic and functional purposes of planting design.

5340. PROFESSIONAL PRACTICE (3-0). Ethical, legal, and administrative aspects of the public, private, and academic spectrums of practice in landscape architecture.

5341. LANDSCAPE TECHNOLOGY I (2-4). Surveying, site grading, storm water management, vertical and horizontal curves and an overview of the construction documentation process employed by landscape architects.

5342. LANDSCAPE TECHNOLOGY II (2-4). Materials and techniques employed in the construction process. Materials are examined through completion of design details that specify how they can be used as part of a landscape construction. Detailed methods of design evaluation such as drawings, scale models, and actual construction sites are included.

5344. PARK AND RECREATION DESIGN AND PLANNING (2-2). History, data collection, program formulation, and design principles for public and private park and recreation systems and sites. Includes management objectives, operations and maintenance, and public input as planning components.

5350. LANDSCAPE ARCHITECTURE COMPUTER APPLICATIONS (2-4). Examines various computer applications currently used in office practice. Computer applications used for office management, site analysis, design development, construction documentation, and cost estimating. Introduction to computer aided design applications and the underlying theories of application.

5351. ADVANCED COMPUTER-AIDED DESIGN (2-4). Expansion of LARC 5350. Students complete a typical design problem utilizing computer-aided methods; students examine the differences between traditional manual methods of design and computer-aided techniques. Instruction in data standards, methods of translation, layering of design information, and connections between the phases of the design process.

5368. DESIGN PRACTICUM (3-0). An internship program which includes approved work done in a landscape architect's office or one of the related design fields. The purpose of the practicum is to provide students with practical design experience. Students may enroll in 5368 for half-time employment or 5668 for full time employment.

5380. RESEARCH METHODS IN LANDSCAPE ARCHITECTURE (3-0). Theories of practical research and methods of applying them as they relate to landscape architecture. Includes research program development, data collection and analysis, proposal writing and research techniques and tools. Emphasis is on qualitative methods.

5382. SEMINAR IN URBAN DESIGN (3-0). Advanced presentation and discussion of issues related to contemporary and historic urban design. Students present and lead informed discussions on topics such as population density, environmental management, waterfront development, allocation of open space, public art, urban form, and cultural determination.

5391. CONFERENCE COURSE IN LANDSCAPE ARCHITECTURE (3-0). Special subjects and issues in landscape architecture that may be studied independently under faculty supervision. May be repeated for credit.

5395. SELECTED TOPICS IN LANDSCAPE ARCHITECTURE (3-0). Selected studio or lecture course offerings in specific areas of expertise or interest. Course allows the program the flexibility to address the ever-changing needs of students and the profession by offering courses beyond the scope of the core curriculum. May be repeated for credit.

5398. THESIS (3-0). Independent research and presentation of findings under the direction of a supervising committee. The findings of the thesis should extend the boundaries of the professional discipline by either presenting new and unique ideas or information, or by interpreting existing knowledge from a different perspective.

5623. STUDIO TEACHING PRACTICUM (0-9). Students spend one semester as a teaching assistant in the studio sequence under the supervision of the assigned faculty member. They will observe the methods employed in the studio and prepare a comprehensive evaluation of the studio in conjunction with the instructor. The students will oversee one short studio project and evaluate its success or failure based on the criteria learned in LARC 5322 and the goals and objectives of the test project.

5660. ENRICHMENT DESIGN STUDIO (0-9). Review of the principles and processes of design presented in Design Studios I, II, and III. Provides an opportunity for students with weak design and

graphic skills to improve those skills to meet requirements for Design Studio IV. Course can use design competitions as projects.

5661. DESIGN STUDIO I (3-9). A design course for students with no background in landscape architecture or design. Outlines the site planning and site design decision-making process. Focuses on providing students with the verbal, intellectual, and graphic tools necessary to successfully tackle a design problem and bring it to a schematic level of completion. It is highly recommended that this course be taken concurrently with LARC 5320.

5662. DESIGN STUDIO II (0-9). A continuation of 5661. Basic design principles and their application to three-dimensional spaces. Examines how humans occupy exterior space and combines this information with the principles of design to create garden scale models. Models are used as a medium for design expression. Landscape character, design simulation, landscape media, landscape context, and human spatial experience are included.

5663. DESIGN STUDIO III: SITE PLANNING (0-9). Features the process of solving complicated site planning and site design problems. Each phase of the site planning process is examined in detail by undertaking one or more studio problems that involve resolution of issues related to existing site conditions, program development, conceptual design, design development, and design detailing.

5664. DESIGN STUDIO IV: ENVIRONMENTAL PLANNING (0-9). Expands the student's concept of the environment as a large scale ecologic unit independent of political boundaries. Primary focus is on Geographic Information Systems (GIS); therefore, computer-aided design experience is a prerequisite. Presents a process of solving large scale planning problems through data gathering and information processing techniques commonly used by landscape architects employed in environmental planning.

5665. DESIGN STUDIO V: THE URBAN LANDSCAPE (0-12). The summary studio of the design sequence. Basic design principles are reiterated and problems are introduced which require interaction with architects, planners, urban designers, developers, or administrators, on complex urban projects. Course often uses design competitions as projects.

5668. DESIGN PRACTICUM (6-0). An internship program which includes approved work done in a landscape architect's office or one of the related design fields. The purpose of the practicum is to provide students with practical design experience. Students may enroll in 5368 for half-time employment or 5668 for full time employment.

5691. CONFERENCE COURSE IN LANDSCAPE ARCHITECTURE (6-0). Special subjects and issues in landscape architecture that may be studied independently under faculty supervision. May be repeated for credit.

5698. THESIS (6-0). Independent research and presentation of findings under the direction of a supervising committee. The findings of the thesis should extend the boundaries of the professional discipline by either presenting new and unique ideas or information, or by interpreting existing knowledge from a different perspective.

5998. THESIS (9-0). Independent research and presentation of findings under the direction of a supervising committee. The findings of the thesis should extend the boundaries of the professional discipline by either presenting new and unique ideas or information, or by interpreting existing knowledge from a different perspective.

The College of Business Administration

Dean: Daniel D. Himarios, Ph.D.
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Mission and Philosophy

The College of Business Administration strives to be a recognized contributor in the field of business education and research. It is our mission to build and maintain a quality educational environment, creating value for our constituencies.

Our achievement-focused programs produce quality graduates at all degree levels. These programs respond to changing needs and opportunities, generate and communicate new knowledge and ideas to benefit the scholarly, public and private sectors, and provide a wide range of intellectual and professional services locally, regionally, nationally and internationally.

Our philosophy can be summarized in the following objectives:

- To discover and disseminate knowledge that, through its relevance and rigor, benefits our students, practitioners and other constituencies.
- To continue to develop and provide instructional programs that meet the needs of our students: part-time, full-time, employed and international.
- To maintain a rigorous and effective client-focused environment that capitalizes on our urban setting.
- To continually improve all our academic programs, with special emphasis on master's programs, to effectively address the diversified needs of the Dallas/Fort Worth Metroplex.
- To further our community interaction by offering off-campus courses, distance education and professional development seminars.
- To enhance the visibility of the college and improve its financial strength through increased external funding.
- To provide advisory services to academic, professional and other organizations.

History and Overview

Since its origination in 1959, the College of Business Administration has been one of the fastest growing business schools in the nation. This growth has mirrored the dynamic growth of the D/FW Metroplex as the college has worked hard to provide high quality educational programs. The college is organized into six academic departments: Accounting, Economics, Finance and Real Estate, Information Systems and Operations Management, Management, and Marketing. A total of 138 full-time equivalent faculty organize and conduct classes, including 97 with doctoral degrees from some of the top schools in the nation. The college currently enrolls 5,500 students, of whom more than 1,000 are enrolled in 12 graduate business programs.

Accreditation

The University of Texas at Arlington and its College of Business Administration is fully accredited in business and accounting at both the undergraduate and graduate levels by the AACSB–International.

Scholastic Activity and Research Interests of the Faculty

Many of the faculty have professional certifications and years of experience in the business world, including serving as consultants, expert witnesses, and in other professional capacities. They actively engage in research that enables them to be at the forefront of the discovery of new knowledge in their fields. All these activities allow them to bring professional experiences and new ideas into the classroom.

Special Programs and Opportunities

The Graduate Advanced Studies Program

This is a certificate program open to those holding a graduate degree in a business field. Applicants must meet normal MBA admissions requirements and complete 12-21 semester hours of graduate courses in a specified area. This is an excellent way for business professionals to update their business skills in advanced areas.

Dual Degree Programs

The college offers a rich array of dual degree opportunities that build synergistic skill sets that prepare students for more advanced career opportunities. While most dual degree programs include two graduate business degrees, the Professional Management Option in the MBA program allows professionals with undergraduate degrees in engineering, architecture, nursing, education, and urban affairs to complete a master's degree in that field along with the MBA. Dual degree programs allow students to earn two degrees with a substantial reduction in course requirements. The MBA Program also offers a special dual degree with Thunderbird's Master of International Management.

Integrated Five-year Programs

Professional Programs in Accounting (PPIA)

The PPIA program is designed to meet the needs of exceptional students. The Professional Program in Accounting allows a student to earn both a bachelor of business administration and master of science in accounting or taxation. Once accepted into this integrated program, students may enroll in graduate courses prior to completing their undergraduate degree. The program may be completed in approximately one less semester than required to earn separate bachelor's and master's degrees.

Professional Program in Business (PPIB)

The PPIB program is designed for students with outstanding academic performance and very focused interests in pursuing a master's degree. Students can meet requirements for both bachelor's and master's degrees in a stacked, five-year format. The five-year, two-degree program can be completed with up to 12 fewer hours than

would be required in completing the degrees separately. Both degrees are awarded simultaneously using any possible combination of UT Arlington undergraduate business programs (B.B.A., B.A., B.S.) and graduate programs (M.B.A., M.S., M.A.). An interested student should consult with an undergraduate advisor and appropriate graduate program advisor prior to entering the senior year of undergraduate study.

Careers Program

An optional four-part Careers Program is open to all graduate students. This program provides excellent support for students in identifying and preparing for the career of their choice. The program begins with a comprehensive careers class (MANA 5338) that provides extensive individual assessments, a study of analytical models of career choice, an exploration of the opportunities available in the marketplace, and mentoring and networking opportunities. The second part is a graduate internship program that is available to students of all graduate programs to assist them in gaining experience integral to their careers. Study abroad and exchange programs comprise the third part of the program. The final component is advice from faculty members on how to best build a program of study that focuses upon a particular career track. The MBA program supports multiple different career tracks, while the other master's programs are designed for specialized study.

Internship Program

Graduate students are encouraged to participate in internships to supplement and complement classroom education by providing valuable experience and training in their chosen area of expertise. Internships allow students to meet and interact with professionals in the work setting, identify and develop critical professional skills, clarify their own career goals and interests, and develop important contacts for future development. This paid internship program is open to all graduate students who have completed nine hours of graduate courses, are in good academic standing (GPA => 3.0), and have secured their advisor's approval for up to three hours of graduate credit. Interested students should ask for a fact sheet and an application in the Graduate Business Services Office. After gaining the advisor's approval, students will complete an application and meet with the appropriate departmental internship coordinator. Once an internship is obtained, the coordinator will monitor progress and assign an appropriate grade.

Study Abroad/Exchange Programs

The leaders for the 21st century will be deeply involved in business opportunities around the world. Many study abroad/exchange programs are available to help students prepare in both curricular and extracurricular ways for these future international leadership roles. Students wishing to study abroad are encouraged to review the many opportunities contained in the Study Abroad Library in the International Office. Once a specific program is identified, students discuss the available courses with their advisor to ensure they will help meet degree requirements. Depending on their terms, study abroad/exchange programs may allow students to complete courses as resident credit or as transfer credit.

Programs

Graduate programs include the Ph.D. in Business Administration and the Master of Business Administration at the college level and ten master's level specialized programs in the departments. All programs are listed below.

Graduate Programs at the College Level

Master of Business Administration
Executive Master of Business Administration
Online Master of Business Administration
Ph.D. in Business Administration

Specialized Programs at the Department Level

Master of Professional Accounting
Master of Science in Accounting
Master of Science in Taxation
Master of Arts in Economics
Master of Science in Information Systems
Master of Science in Marketing Research
Master of Science in Human Resource Management
Master of Science in Real Estate
Master of Science in Health Care Administration
Master of Science in Quantitative Finance

Objective

The objective of the Master of Professional Accounting, the Master of Science in Accounting, and the Master of Science in Taxation degree programs is to prepare students for professional careers in the public, private, or governmental sector. As a part of this objective, these programs are designed to provide the educational background to become a Certified Public Accountant or to attain other professional certifications. The MPA program, appropriate for students without significant prior study in accounting, is also designed to provide an understanding of selected fields such as management, finance, economics, and business law. The MS in Accounting and MS in Taxation are more specialized degrees which build on the individual's prior background in accounting and business-related subjects.

The department also offers a Certificate in Taxation. The objective of this certificate program is to serve degreed professionals who wish to update or add to their knowledge of taxation.

Careers in Accounting

Accounting is a career without limits. Accountants serve as analysts, consultants, and problem-solvers in business and government. Earning an accounting degree opens up a diverse array of career opportunities including: partner in an international accounting or consulting firm, corporate controller, chief financial officer, director of internal auditing, financial planner, or commercial lender. Compensation is highly competitive with excellent geographic mobility.

Students of accounting learn to use and control information technology systems, prepare and analyze financial reports, structure business transactions, and develop effective business plans. Individuals who like being challenged by a variety of situations and technologies and who enjoy identifying, analyzing, and solving problems are well-suited to majoring in accounting. Additional information about the accounting profession and its diverse opportunities can be obtained at **http://aicpa.org/nolimits/index.htm.**

Accreditation

The University of Texas at Arlington, its College of Business Administration and the Department of Accounting are accredited by AACSB - The International Association for Management Education. The department is also a member of the Federation of Schools of Accountancy.

Admissions Requirements

Degree-Seeking Students

Regular Admission

The Department of Accounting's (the department) admission criteria for its master's programs have been developed to conform to State of Texas requirements and are based on the general admission requirements of the Graduate School. Applicants are encouraged to include a resume that highlights professional and personal accomplishments with their application.

Students for whom English is not their native language must achieve a score of 550 (or 79 under the new scoring system) on the TOEFL examination. International applicants who score below 550 (or 79 under the new scoring system) minimum on the TOEFL examination may be admitted with the condition that they pass an English proficiency examination or complete UT Arlington's Graduate English Skills Program prior to beginning graduate coursework.

Department of Accounting

www2.uta.edu/accounting
accounting@uta.edu

Areas of Study and Degrees

Accounting
M.P.A., M.S.

Taxation
M.S., Tax Certificate

Business Administration
M.B.A., Ph.D.

Master's Degree Plans

Thesis and Non-Thesis

Chair

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Graduate Faculty

Professors
T. Hall, Taylor

Associate Professors
B. Hall, Ho, Mark, McConnell, Subramanium, Tsay, Walther

Assistant Professors
Efendi, Winterbotham

Professors Emeritus
Ross, Witt

All applications for admission are reviewed individually. Admission decisions are based on factors associated with academic success in graduate study and may include any of the following criteria: (1) undergraduate grade point average, (2) graduate grade point average, (3) GMAT scores, (4) professional work experience, (5) professional certification or licensure, (6) letters of reference, (7) the applicant's personal statement, (8) prior successful completion of a baccalaureate degree, (9) prior successful completion of a post-baccalaureate degree, and (10) general and specific program accreditation status of the applicant's degree granting institution(s). Standardized test scores are not used as the sole criterion for admitting applicants or denying admission to applicants. Further details regarding the admission process are provided under the "Advising" link on the departmental Web site at **www2.uta.edu/accounting.**

Depending on the circumstances applicants may:

- Have their application denied or deferred; or
- Receive unconditional, probationary, or provisional admittance.

Applicants whose documentation does not satisfactorily demonstrate readiness for graduate study may be denied admission. A deferred decision may be granted when a file is incomplete or when a denied decision is not appropriate.

Unconditional admission is granted to applicants whose documentation clearly demonstrates a readiness for graduate study. Probationary admission may be granted to individuals who do not meet the department's admission requirements but who nevertheless show promise for successful graduate study. Students admitted on this basis must meet certain academic requirements to remain in the program (such as no grade less than 'B' for the first 12 hours of graduate study). An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission. Provisional status lasts through the initial semester of admission.

Alternative Admission

The Department of Accounting participates in the University's GMAT Waiver and Advanced Admission Policies. Applicants to any of the accounting graduate degree programs who have received an undergraduate accounting degree from UT Arlington and meet certain other requirements may qualify for waiver of a GMAT score. For more complete information on this matter, visit the Department of Accounting Web site at **www2.uta.edu/accounting.**

University and College Fellowship/Scholarship Awards

The Department of Accounting follows all applicable Graduate School criteria when awarding graduate fellowships and scholarships. Students who are unconditionally admitted, have a minimum undergraduate grade point average of 3.0 as calculated by the Graduate School (or 3.0 at the graduate level), and enroll for a minimum of six semester credit hours will be eligible for available fellowship and/or scholarship support. A standardized test score (GMAT) will not be used as a sole criterion for determining fellowship and/or scholarship support.

Classroom Time Flexibility

All of the graduate degree programs offered by the Department of Accounting can be completed by individuals who work full-time and wish to attend class in the evenings. Each student's program of work must be approved by the Accounting Graduate Advisor and must include a minimum of 27 semester hours taken at The University of Texas at Arlington. Courses which are not considered suitable to a student's program of work will not be approved. During the final semester, students who have written a thesis must defend the thesis in an oral examination.

Reservation of Graduate Courses by Undergraduate Students

Students who meet the criteria in the relevant Graduate Catalog and are currently enrolled as an undergraduate student at UT Arlington may, based on the criteria and conditions in the Graduate Catalog, be allowed to take up to 12 semester hours of graduate coursework without taking the GMAT or otherwise making application to a graduate program. For more complete information on this matter, visit the Department of Accounting Web site at **www2.uta.edu/accounting.**

Departmental Grade and Graduation Requirements

Students enrolled in accounting degree programs are subject to the grade requirements for academic probation and graduation as specified under the general regulations of the Graduate School. In addition to the Graduate School's Regulations, the Department of Accounting will not allow any course in which a student earns a D or F to be applied toward the student's program of work.

Professional Program in Accounting

The Department of Accounting offers a Professional Program in Accounting (PPIA) that allows students to earn both a bachelor's degree and master's degree upon completion of an integrated 152-hour program. This integrated program can be completed in approximately one less semester than required to earn separate bachelor's and master's degrees. Students completing this program will have earned sufficient hours to sit for the CPA exam.

PPIA Enrollment and Course Sequence

Students will get maximum effectiveness from the PPIA program if they apply two semesters before completing undergraduate coursework.

Upon admission to the PPIA, students will meet with the Graduate Advisor to obtain their graduate degree plan. Students will continue following their undergraduate plan until all appropriate undergraduate coursework is completed. Courses omitted from the undergraduate coursework will be taken as part of the MS program. These courses will be taken later as part of the graduate program and will be applied to both the graduate degree and the undergraduate accounting degree. At the beginning of the last semester of undergraduate enrollment, PPIA students will formally apply for graduate admission. At this point, students should again meet with the graduate advisor to ensure a smooth transition to graduate school.

PPIA Admission Requirements

The Department of Accounting's (the department) admission criteria for its PPIA program have been developed to conform to State of Texas requirements and are based on the general admission require-

ments of the Graduate School. Applicants are encouraged to include a resume that highlights professional and personal accomplishments with their application.

All applications for admission to the PPIA program are reviewed individually. Admission decisions are based on factors associated with academic success in graduate study and may include any of the following criteria: (1) undergraduate grade point average, (2) performance in accounting classes at UT Arlington, (3) GMAT scores, (4) professional work experience, (5) personal accomplishments, (6) letters of reference, and (7) the applicant's personal statement. Standardized test scores are not used as the sole criterion for admitting applicants or denying admission to applicants. Further details regarding the admission process are provided under the "Advising" link on the departmental Web site at **www2.uta.edu/accounting.**

Depending on the circumstances applicants may:

- Have their application denied or deferred; or
- Receive unconditional, or provisional admittance.

Applicants whose documentation does not satisfactorily demonstrate readiness for graduate study may be denied admission. A deferred decision may be granted when a file is incomplete or when a denied decision is not appropriate.

Unconditional admission is granted to applicants whose documentation clearly demonstrates a readiness for graduate study. An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission. Provisional status lasts through the initial semester of admission.

PPIA Advising

Students considering the PPIA program are strongly encouraged to meet with the graduate advisor in order to obtain all of the benefits of this program. Assistance is essential in the area of course selection at both the undergraduate and graduate levels. Departmental advising can help a student minimize the semester hour requirements for each degree.

Until admission to the PPIA program is granted, students will still be advised by the College of Business Administration Undergraduate Advising Center.

After admission to the PPIA program, students will be advised by the Accounting Department's Graduate Advisor.

Program Coursework

Pre-Enrollment Competency Requirements

The accounting graduate degree programs have pre-enrollment competency requirements as well as accounting degree requirements. Applicants can have some or all pre-enrollment competence areas waived if they have completed similar courses at an accredited college or university within the last 10 years and received a grade of C or better in those courses. Extensions to the 10-year limit may be granted for managers and executives who have completed continuing education requirement courses to remain current in their profession or have extensive relevant experience. Normally, individuals who have completed an undergraduate degree in accounting from an accredited university within the past 10 years will have met all the pre-enrollment competency requirements.

Accounting Degree Requirements

Accounting degree requirement courses may be waived if an equivalent course is completed at an accredited college or university within the last 10 years and a grade of C or better is earned in the respective course. Accounting degree requirement courses are waived with replacement.

Students should be aware that the current Graduate Catalog permits a maximum of 9 hours of accounting degree requirement coursework to be transferred from another AACSB accredited school if approved by the Dean of Graduate Studies. Courses used to waive program course requirements cannot also be counted toward transfer hours. The same course can be used to satisfy an accounting degree requirement course waiver or as a transfer course but not both.

Transfer of graduate classes from other universities or colleges will be considered on a case-by-case basis. To be eligible for consideration for transfer credit, the hours must: (a) be graduate-level coursework; (b) not have been used or applied toward any other degree the student has earned; (c) have been taken within the past 10 years; and (d) have been completed with a grade of A, B, or C.

Master of Science in Accounting

This program is designed for students who have an undergraduate degree in accounting or a degree in business administration with a major in accounting who wish to specialize in an area of accounting other than tax. The student, with the assistance and consent of the Graduate Advisor, will develop a course of study designed to meet his or her educational needs in light of previous academic work and career objectives.

The M.S. in Accounting requires the student to complete a minimum of 36 semester hours of coursework, 24 of which must be in the accounting discipline.

If students have not satisfactorily completed all of their pre-enrollment competency requirements, they will, in addition to their program of work, also be required to complete those pre-enrollment competency courses. A grade of A, B, or C is required for each pre-enrollment competency course. If college courses in these areas have not been completed with a grade of A, B, or C, students must include these courses in their program of work. If needed, these courses may be completed at the undergraduate or graduate level.

M.S. in Accounting Tracks

Students can select various specialization tracks in an accounting-related discipline such as external reporting, audit/systems or managerial. Students may also choose to direct their 12 hours of business electives toward a specialized track such as finance, economics, information systems, management or marketing. Recommended course sequences for both the accounting and external tracks can be obtained by consulting the "Advising" section of the departmental Web site at **www2.uta.edu/accounting.**

Master of Professional Accounting (MPA)

The MPA program is designed for individuals who hold an undergraduate degree in any major other than accounting (economics, engineering, finance, liberal arts, management, mathematics, science, etc.) . The MPA program requires the student to complete a minimum of 42 semester hours of coursework. If the student has not satisfactorily completed all of their pre-enrollment competency requirements, they will, in addition to their program of work, also be required to complete those pre-enrollment competency courses. A grade of A, B, or C is required for each pre-enrollment competency

course. If college courses in these areas have not been completed with a grade of A, B, or C, students must include these courses in their program of work. If needed, these courses may be completed at the undergraduate or graduate level.

For those individuals who hold an undergraduate business degree, the MPA will normally require 42 hours of coursework. For those individuals who hold an undergraduate degree in a non-business discipline, the MPA will normally require 45 hours of coursework for those with a science or engineering undergraduate degree and 51 hours for most other non-business undergraduate degrees. Regardless of undergraduate background, the MPA degree requires a total of 27 hours of accounting plus 6 hours of accounting principles as a pre-enrollment requirement. Thus, MPA graduates will have a total of 33 hours of accounting.

Master of Science in Taxation

The Master of Science in Taxation (MST) is designed for students who have an undergraduate degree in accounting or a degree in business administration with a major in accounting who wish to specialize in taxation. The student, with the assistance and consent of the Graduate Advisor, will develop a course of study designed to meet his or her educational needs in light of previous academic work and career objectives.

The degree requires a minimum of 36 semester hours, of which 27 semester hours must be accounting. Of the required accounting semester hours, 15 of those semester hours must be in the area of taxation beyond ACCT 5314.

If the student has not satisfactorily completed all of their pre-enrollment competency requirements, they will, in addition to their program of work, also be required to complete those pre-enrollment competency courses as part of their program of work. A grade of A, B, or C is required for each pre-enrollment competency course. If college courses in these areas have not been completed with a grade of A, B, or C, students must include these courses in their program of work. If needed, these courses may be completed at the undergraduate or graduate level.

Certificate in Taxation

To support The University of Texas at Arlington's mission to provide lifelong learning opportunities to the community, the Department of Accounting offers qualified applicants an opportunity to participate in a Graduate Certificate in Taxation. The program offers graduate courses in specific areas of taxation as a means of

- maintaining and promoting their professional development in an interactive environment;
- acquiring continuing education hours necessary to maintain a professional certification;
- furthering their opportunity to participate in a graduate degree program. Subject to the applicable degree requirements, up to 4 courses taken in the certificate program can be applied toward a master's degree;
- providing quality cost-efficient staff training;
- interacting with other professionals and developing a dialogue that can improve your practice's efficiency and effectiveness. A number of our professors in the program are either currently with the Internal Revenue Service or in practice in the area of specialization associated with the course.

Admission Requirements

This certification program is a post-baccalaureate educational opportunity available to degreed professionals.It is narrower in scope and shorter in duration than any of the department's graduate degree programs. To qualify, an applicant must

- have an undergraduate degree;
* have a grade point average of 2.8;
* follow the admission procedures required for a special student.

A GMAT score and letters of recommendation are not required for admission to the program.

Information About Your Status as a Special Student

Special student status characteristics:

- Good for only one semester
- Must be approved by the Dean of Graduate Studies
- No more than twelve (12) hours of work earned as a special student may be applied to a graduate degree at UT Arlington.

A person who is admitted as a special student and later seeks admission to a degree program must submit a regular Graduate School Application for Admission form, pay the application fee, submit all required documents, and meet all admission requirements, including admission tests and any additional requirements established by the degree program.

Application to a Graduate Program

Admission as a special student in no way guarantees subsequent unconditional admission into a graduate program or the Graduate School.Anyone who enters the Certification Program and later seeks a graduate degree at the College of Business Administration may apply 12 hours of coursework toward that degree program if done within 6 years of completion of the certificate by petitioning the Graduate School through her/his prospective academic department. Only grades of A and B may be so applied toward graduate credit.

Terms of Admission

Once admitted, participants may take up to four (4) of the approved courses. The terms of admission allow participants to take only the specific courses approved for the program. Participants would not be allowed to take courses outside of their program without applying for and having been accepted into the graduate program.

Current Graduate Students

Graduate students currently enrolled in a UT Arlington graduate program may also earn the certificate by notifying the Chair of the Department of Accounting of their intent to participate in the certification program and by successfully completing the prescribed number of classes.

Available Courses

The Certificate in Taxation requires students to take and successfully complete, with a minimum GPA of 3.0, four advanced tax courses. Those students entering the Certificate Program without having taken the equivalent of the undergraduate tax course will also be required to take a "foundation" course, ACCT 5314.

Courses appropriate for the Certificate Program have been selected because their subject matters directly relate to materials needed by professionals engaged in tax-related activities. Full course descriptions for these advanced courses are included in The University of Texas at Arlington's Graduate Catalog.

Grade Point Average While in the Certificate Program

All participants in the program must meet the normal GPA requirements of the Graduate School, College and Department of Accounting. In particular, they must maintain an overall GPA of 3.0 in order to receive the Certificate.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Accounting (ACCT)

5199. GRADUATE ACCOUNTING INTERNSHIP (1-0). Practical training in accounting. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

5299. GRADUATE ACCOUNTING INTERNSHIP (2-0). Practical training in accounting. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

5301. ACCOUNTING ANALYSIS I (3-0). Introduction to concepts, purposes, problems, methodology, and terminology of financial accounting.

5302. ACCOUNTING ANALYSIS II (3-0). Introduction to concepts, purposes, problems, methodology, and terminology of managerial accounting. Prerequisite: ACCT 5301 with a grade of C or higher.

5311. FINANCIAL ACCOUNTING I (3-0). Examination of financial accounting process, problems encountered in preparation of financial statements, and concepts and principles used to resolve these problems. Prerequisite: ACCT 5301 with a grade of C or higher.

5312. FINANCIAL ACCOUNTING II (3-0). Study of additional problems encountered in preparation of financial statements. Prerequisite: ACCT 5311 with a grade of C of higher.

5313. SOFTWARE TOOLS (3-0). An in-depth study of software that would likely be used by accountants and other business people. May include spreadsheet, database, and accounting software, tax software, and other types of tools such as XBRL and XML. Prerequisite: ACCT 5302 with a grade of C or higher.

5314. PRINCIPLES OF FEDERAL INCOME TAX (3-0). A study of general federal income tax principles such as income, deductions, losses and property transactions. The principles of individual taxation will be covered as well as an overview of tax considerations for entities such as corporations and partnerships. Prerequisite: ACCT 5301 with a grade of C or higher.

5315. ACCOUNTING SYSTEMS ANALYSIS (3-0). Analysis and design of business information processes. Includes coverage of control concepts, audit trails, and the uses of information technology. Emphasis on the role of accounting in collecting, storing, and communicating information for management planning and control. Prerequisite: ACCT 5302 with a grade of C or higher.

5316. AUDITING CONCEPTS AND PRACTICES (3-0). Concentrates on practice of professional accounting and auditing. Emphasizes decision making in a variety of unstructured situations where decisions demand a grasp of purpose, method, and judgment for their resolution. May not be taken for credit by students who have received credit for a course in auditing. Prerequisite: ACCT 5312 and 5315 with grades of C or higher.

5317. COST ACCOUNTING (3-0). Uses and classification of costs incurred in manufacturing. Emphasis on concepts involved in assignment and reporting of costs under job order, process, standard and direct costing systems. Prerequisite: ACCT 5302 with a grade of C or higher.

5318. STUDIES IN AUDITING (3-0). A critical analysis of advanced topics in both auditing theory and professional practice. Emphasis on: development of auditing theory, generally accepted auditing standards, professional responsibilities, auditing EDP, SEC practice and reporting, cases in audit decision making, and analyses of emerging issues and contemporary problems in auditing. Prerequisite: ACCT 5316 with a grade of C or higher.

5319. FINANCIAL ACCOUNTING III (3-0). Accounting for business combinations, preparation of consolidated financial statements, multinational operations, partnerships, and estates and trusts. Prerequisite: ACCT 5312 with a grade of C or higher.

5320. GOVERNMENTAL AND NONPROFIT ACCOUNTING (3-0). Budgeting, accounting and financial reporting, managerial control, and auditing considerations of governmental and nonprofit entities. Prerequisite: ACCT 5312 with a grade of C or higher.

5321. RESEARCH IN ACCOUNTING ISSUES (3-0). Designed to improve student's ability to research complex areas in accounting and to sharpen understanding and application of accounting concepts and principles. Case studies and problems considered and analyzed. Prerequisite: ACCT 5312 with a grade of C or higher.

5322. ACCOUNTING FOR MANAGEMENT PLANNING AND CONTROL (3-0). Concentrates on information needs of management for planning and control of operations. Topics include setting corporate objectives, behavioral problems, capital budgeting and profit-planning, the use of quantitative tools, divisional performance evaluation, and transfer pricing. May not be taken for credit by students who previously received credit for ACCT 4302 or equivalent. Prerequisite: ACCT 5302 with a grade of C or higher.

5324. FINANCIAL STATEMENT ANALYSIS (3-0). A study of the basic financial statements and their use by managers, investors, and creditors. Prerequisite: ACCT 5302 with a grade of C or higher.

5327. CONTEMPORARY ISSUES IN ACCOUNTING THEORY (3-0). Designed to familiarize students with significant problems currently facing the accounting profession, to examine in depth various solutions proposed by accounting scholars and others, and to strengthen student understanding of today's critical issues in accounting theory.Prerequisite: ACCT 5312 with a grade of C or higher.

5329. SURVEY OF ACCOUNTING SYSTEMS (3-0). A survey and design critique of typical accounting software systems. Functional areas include general ledger, receivables, payables, payroll, and inventory. Evaluation of emerging technologies, especially those relating to data capture and communication, internal control, audit trails, and reporting capabilities. Prerequisite: ACCT 5315 with a grade of C or higher.

5330. INTERNATIONAL ACCOUNTING AND FINANCIAL REPORTING (3-0). Financial accounting and reporting principles and practices in various countries, the role of accounting in economic development, as well as the accounting considerations in international business operations - e.g., foreign currency translation, auditing, accounting systems, taxation, and sensitive payments. Prerequisite: ACCT 5302 with a grade of C or higher.

5332. OPERATIONAL AUDITING (3-0). A study of operational audit methodology for management audits. Audits of administrative and support functions, and other special areas such as fraud audits. Prerequisite: Graduate standing and six hours of accounting with grades of C or higher.

5335. DESIGN OF ACCOUNTING SYSTEMS (3-0). A detailed study of the data entry, storage (file design), internal control, and reporting requirements of accounting systems, followed by the development of a significant accounting subsystem using a software development tool. Prerequisite: ACCT 5315 with a grade of C or higher.

5339. TAX PLANNING AND RESEARCH (3-0). A study of the use of various techniques and procedures available in evaluating issues arising under federal income tax law. Emphasizes research into individual and business tax problems and planning alternatives. Prerequisite: ACCT 5314 with a grade of C or higher.

5340. STUDY OF FEDERAL INCOME TAX FOR ENTITIES OTHER THAN INDIVIDUALS (3-0). Comprehensive analysis of the federal income tax consequences applicable to entities other than individuals. Analysis of the relevant tax principles of corporations, partnerships, trusts and estates will be undertaken. Cannot be taken for credit within the 36-hour program requirements for Master of Science in Taxation program. Prerequisite: ACCT 5314 with a grade of C or higher.

5341. TAXATION OF PASSTHROUGH ENTITIES (3-0). Analysis of the federal income tax rules governing passthrough entities. Prerequisite: ACCT 5314 and ACCT 5339 with grades of C or higher.

5342. TAX PROBLEMS OF CORPORATIONS AND SHAREHOLDERS (3-0). Analysis of the federal income tax rules governing corporations and shareholders. Subjects include corporate formations, corporate capital structure, administrative requirements affecting corporations, the corporate alternative minimum tax, special tax provisions (such as the personal holding company and accumulated earnings taxes and the collapsible corporation rules), nonliquidating distributions, stock dividends, redemptions and partial liquidations, liquidating distributions, corporate reorganizations, and Subchapter S corporations. Prerequisite: ACCT 5314 with a grade of C or higher.

5343. TAX PROBLEMS OF TRANSACTIONS IN REAL ESTATE (3-0). Problems and elections relating to the acquisition, holding, and disposition of real property. Subjects include means of acquisition and disposition, capital gains and losses, deferred payment sales, organization of syndicates, sale and leaseback, dissolutions, and general tax-saving methods. Prerequisite: ACCT 5314 with a grade of C or higher.

5345. STATE AND LOCAL TAXATION (3-0). Introduction to the principles and practices of state and local taxation. Topics considered in the course include the application of both inter- and intra-state taxation, allocation and apportionment principles and issues in relation to the predominant forms of state taxes, such as franchise, sales, use, income, ad valorem, and property tax. Prerequisite: ACCT 5314 with a grade of C or higher.

5346. TAX PRACTICE AND PROCEDURE (3-0). This course overviews the procedural aspects of dealing with the Internal Revenue Service. The focus is from the private practitioner's perspective in assisting clients in navigating the Service's administrative requirements. Topics include administrative organization of the Service, tax audits, the use of Service administrative summonses, statutes of limitation, penalties, interest charges, civil and criminal procedures and appeals. Prerequisite: ACCT 5314 with a grade of C or higher.

5347. FEDERAL TAXATION OF GIFTS AND ESTATES (3-0). A comprehensive survey of the principles and procedures involved in determining the federal estate tax and the supplementary federal gift tax including taxability and valuation of property and the determination of deductions and credits. Prerequisite: ACCT 5314 with a grade of C or higher.

5352. INFORMATION SYSTEMS AUDIT AND CONTROL (3-0). A study of modern approaches to the audit and control of business information systems. Prerequisite: ACCT 5315 and 5316 with grades of C or higher.

5353. STATISTICAL TECHNIQUES USED IN ACCOUNTING (3-0). A study of statistical techniques used in accounting. Topics include alternative sample selection methods, attribute methods, mean-per-unit estimation, ratio and difference estimation, monetary unit sampling, and regression analysis. Prerequisite: STAT 5301 with a grade of C or higher.

5380. ETHICS IN ACCOUNTING (3-0). This course is intended to introduce students to ethical reasoning, integrity, objectivity, independence, professionalism and other core values. The course incorporates the essentials of professional responsibilities, including elements of trust and communications with clients and other professionals. Both ethical principles and rules are considered. This course is intended to satisfy conditions of the Texas State Board of Public Accountancy that require candidates for the CPS Exam to have completed an approved ethics course.

5382. INDEPENDENT STUDIES IN ACCOUNTING (3-0). Extensive analysis of an accounting topic. Prerequisite: Consent of faculty member and department chair.

5392. SELECTED TOPICS IN ACCOUNTING (3-0). In-depth study of selected topics in accounting. May be repeated when topics vary. Prerequisite: consent of instructor.

5398. THESIS (3-0). Thesis. Graded F, R. Prerequisite: permission of Accounting Graduate Advisor.

5399. GRADUATE ACCOUNTING INTERNSHIP (3-0). Practical training in accounting. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

5698. THESIS (6-0). Thesis. Graded F, R. Prerequisite: permission of Accounting Graduate Advisor.

6101. ACCOUNTING RESEARCH COLLOQUIUM (1-0). A forum in which visiting scholars and UT Arlington faculty members present and discuss results of their contemporary research. Doctoral students participate by meeting with visiting scholars, reading the research papers, providing written critiques, and discussing the papers. Doctoral students are required to enroll and attend the colloquia presentations each fall and spring semester until the students pass all their comprehensive examinations. May be repeated for credit. Prerequisite: consent of College Ph.D. advisor.

6309. SEMINAR IN ACCOUNTING RESEARCH I (3-0). Analysis of the theoretical and empirical literature in accounting. Prerequisite: consent of College Ph.D. advisor.

6310. SEMINAR IN ACCOUNTING RESEARCH II (3-0). Continuation of analysis of the theoretical and empirical literature in accounting. Prerequisite: ACCT 6309 with a grade of C or higher and consent of the College Ph.D. advisor.

6311. SEMINAR IN ACCOUNTING RESEARCH III (3-0). Continuation of analysis of the theoretical and empirical literature in accounting. Prerequisite: ACCT 6310 with a grade of C or higher and consent of the College Ph.D. advisor.

Program in Business Administration

www2.uta.edu/coba

Area of Study and Degrees
Business Administration
M.B.A., Executive M.B.A., Online M.B.A., Ph.D.

Master's Degree Plan
Thesis and Non-Thesis

Director of MBA Program
Melanie Woodard McGee
107 Business
817.272.0658

Director of Ph.D. Program
Greg Frazier
107 Business
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Graduate Faculty
Professors
Amacher, Apilado, R. Baker, Datta, Dickinson, Diltz, Gray, T. Hall, Himarios, McDaniel, Meiners, Munch, Panton, Price, Quick, Raja, Rasheed, Swanson, Taylor, Teng, Whiteside

Associate Professors
Bell, Crowder, Depken, Eakin, Frazier, B. Hall, Ho, Mahapatra, Mark, McConnell, McGee, McMahan, Peterson, Sarkar, Sikora, Slinkman, Subramaniam, Tsay, Walther, Ward, Wheeler

Assistant Professors
Benson, Cannon, Casper, Gallo, Grisaffe, Hansz, Henderson, Jaramillo, Koc, LaFountain, Lavelle, Luo, Nerur, Nordtvedt, Prater, Sabherwal, Skousen, Song, Swafford, Wilson, Yong

Objective: Master of Business Administration (MBA) Program

The Master of Business Administration program offers enhanced learning experiences that prepare leaders and managers for careers with all types of organizations. The faculty's research commitment and consulting rigor contribute to educational excellence. The community of shared knowledge leads to strategic partnerships that significantly enhance the nature of business education. A variety of MBA degrees and certificates are offered to serve a wide variety of interests.

Graduates from the programs are competent in the leadership of organizations and the cross-functional management of organizational resources. Competence is based on educational experiences that foster creative thinking, awareness of global opportunities, sound analytic decision-making, strategic awareness, excellence in functional disciplines, and the internalized values of effective teamwork and leadership. The dedicated faculty and high quality career services assist each student in achieving their educational and career goals.

Accreditation

The Master of Business Administration program is accredited by the AACSB International, the premier accreditation body for business schools in the U.S.

Admissions

Admission to the MBA program is based upon the completion of the general admission requirements of the Graduate School. For MBA program admission a score on the Graduate Management Admission Test (GMAT) and record of one's undergraduate academic performance are required. Students for whom English is not their native language must also achieve a TOEFL score of at least 550. International applicants that score below minimum acceptable levels on the verbal portion of entrance examinations may be admitted under the condition that they pass an English proficiency exam or complete UT Arlington's Graduate English Skills Program prior to beginning graduate coursework. Applicants are encouraged to submit with their application a resume that highlights professional and personal accomplishments, linguistic abilities, computer expertise and leadership experience. Applicants with two to five years of experience are preferred. A standardized test score (GMAT) will not be used as the sole criterion for determining an applicant's admission to the MBA program.

Specifically, multiple criteria are used to make admission decisions. Quantitative measures include an applicant's GMAT score and grade point average as calculated by the Graduate School. These measures are integrated into a formula, or index, that multiplies the grade point average by 200 and adds the total GMAT score. Index factors are weighed equally at the outset of applicant evaluation. A graduate grade point average is used in the index when it is 3.0 or above and is based on at least 24 semester hours.

Along with the grade point average and GMAT total score, admission criteria include the following:

1. GMAT sub scores (verbal and quantitative)
2. GMAT writing sample
3. Grades in specified undergraduate business and non-business courses (math, accounting, economics, statistics, for example)
4. Educational objectives and quality of written expression of the application essay

5. Letters of recommendation from three persons familiar with the applicant's academic background and/or work experience
6. Undergraduate major
7. General and specific program accreditation status of degree-granting institution
8. Professional work experience
9. Professional certification or licensure

Unconditional Admission

For unconditional admission, the applicant's composite total from the index must be 1080 or greater and items 1 through 5 above should strongly indicate potential for successful academic performance as a graduate business student.

Students who are unconditionally admitted, have a minimum undergraduate grade point average of 3.0 as calculated by the Graduate School (or 3.0 at the graduate level), and enroll for a minimum of six semester credit hours will be eligible for available fellowship and/or scholarship support. A standardized test score (GMAT) will not be used as the sole criterion for determining fellowship and/or scholarship eligibility.

Probationary Admission

For an applicant with an index score below 1080 or an applicant who shows deficiency in one or more areas of items 1-9, probationary admission may be available when at least three items of 1 through 5 above strongly indicate potential for successful academic performance as a graduate business student. Items 6 through 9 will also be used to identify positive indicators for admission. Students who are admitted on probation will have one or more conditions specified, such as no grade less than 'B' for the first 12 hours of graduate study.

Provisional, Deferred and Denied Admission

A provisional decision to admit may be granted when the applicant meets criteria for unconditional or probationary status but one or more applicant credentials are incomplete. A deferred decision may be made when an applicant's file is not sufficiently complete to make an admission decision.

For an applicant with an index score less than 1040 and other evidence indicating lack of potential for academic success as a graduate business student, admission will likely be denied. However, all applicant data will be carefully reviewed before an admission denial is made.

Non-Thesis Degree Requirements

The program is designed to accommodate both full-time and part-time students from widely divergent backgrounds. It is not necessary to have completed prior academic work in business administration. Core courses, which are an integral part of the program, are designed to prepare the student for advanced coursework. In order to accommodate the needs of fully-employed professionals, the College of Business Administration offers a complete program in the evening and on Saturday. Most evening or Saturday classes are taught by full-time faculty members and the same academic standards required of full-time students are maintained. Students are expected to progress through the program at a pace that is commensurate with the time available.

Waivers and Transfer Credit

There are three types of required courses: deficiency, core and advanced. Programs of work will normally vary in length from 36 to 45 hours (plus deficiency courses), depending upon waivers granted. The first three waivers of core courses will be used to expand the number of electives in the advanced program rather than shorten the overall program. Additional waivers of core courses may reduce the program to a minimum of 36 hours. Applicants may have both deficiency and core courses waived without the requirement for a substitute course if they have completed a similar course, during the last 10 years, at a recognized college or university and received a "B" or better grade in that course.* Extensions to this 10-year limit may be granted for managers and executives who have completed educational activities to remain current or have extensive related experience. Additionally, a maximum of 9 hours of advanced coursework may be transferred in from other AACSB accredited schools if approved by the program advisor. Transfer of graduate courses from other universities will be considered on a case-by-case basis.

* Note: The University of Texas at Arlington and The University of Texas at Austin offer Business Foundations Programs (BFP) for non-business majors that provide solid foundations in basic business concepts. BFP courses and courses from equivalent programs for non-business majors at other colleges/universities may not be used for course waiver credit.

Deficiency Courses

Applicants are encouraged to complete deficiency requirements prior to applying or at the beginning of their studies. College courses in business math (including probability and set theory, linear equations, matrix algebra, compound interest, annuities, and differential and integral calculus), business statistics, and computers (including general topics, spreadsheets and word processing and electronic communications) may be taken prior to entry in the program. Students who are deficient in written and/or oral communication may be required to take ENGL 1301 and/or SPCH 1301 at UT Arlington after enrollment in the program.

Core Courses

Core courses are often prerequisites for courses taken in the advanced portion of the MBA program. Therefore, core courses should be taken early in the MBA program. The following courses are considered core MBA courses:

Accounting Analysis I (ACCT 5301)
Economic Analysis (ECON 5311)
Operations Management (OPMA 5361)
Marketing (MARK 5311)
Finance (FINA 5311)
Management (MANA 5312)

A prerequisite requirement is considered fulfilled when the student is granted a waiver of that specific core course. Core courses may not be taken as electives in the advanced program.

Advanced Program

The advanced program provides each student the opportunity to tailor their studies to enhance their desired career opportunities. The careers program outlined below provides excellent support and advice to help the student choose an area of specialty and to select those electives that will build requisite career skills. Available specialties include accounting, E-business, economics, finance, health care, information systems, international business, management, operations management, marketing, and real estate.

Required Advanced Courses

Requirements for the advanced program include the following:

STAT 5325 Advanced Statistical Methods

BLAW 5330 or MANA 5337 Legal Environment of Business or Ethics and the Business Environment

ECON 5313 Managerial Economics*

ACCT 5302 Managerial Accounting*

MANA 5336 Strategic Management (Capstone course - taken in last semester of program)

* If relevant academic background is extensive enough in this subject area, the program advisor may allow course substitutions which will correspondingly expand the number of electives in the advanced portion of the program.

Specialty and Breadth Electives

Students may take between nine and fifteen hours in a particular functional area and declare a specialty in that area. However, the advanced portion of the program must have a minimum of five courses (15 semester hours) outside the area of specialty which may be satisfied by the required advanced courses. Courses taken outside the area of specialty are considered breadth electives.

Selection of Electives (Specialty or Breadth)

Students may wish to tailor their program of work to develop business skills and perspectives essential to their career goals and objectives (see Planning a Program of Work). Subject to the approval of the program advisor, some breadth electives may be taken outside the College of Business, when the student has an academic background in that area, or the electives are appropriate to the student's career goals and objectives.

Thesis Degree Requirements

Requirements for the MBA thesis degree are the same as those for a non-thesis program with the following change. A six-hour thesis must be added to the normal 36-hour advanced MBA program. All candidates for this type degree shall defend the thesis at a final oral examination.

Grade and Graduation Requirements

The MBA program follows the grade requirements for probation as specified under the general regulations of the Graduate School. In addition, students must have at least a 3.0 grade point average in all coursework and area of specialty (concentration) to graduate.

Students may be dismissed from the MBA program if they accumulate grade deficiency points greater than allowed. Any grade of C is worth one deficiency point, any grade of D is worth two deficiency points. Deficiency points may not be removed from a student's record by additional coursework.

The maximum allowable deficiency points will be computed by the program advisor when the degree plan is prepared, modified or reviewed using the following guidelines:

Program Length (excluding transfer credit)	Allowable Deficiency Points
12 courses	2
13-17 courses	3
18 courses or more	4

Planning a Program of Work

All students are encouraged to plan an advanced program of work early in their studies. The process begins with a brief "program planning session" conducted on an appointment basis in the Graduate Business Services Office. The workshop provides important reference materials to assist students in preparing a preliminary advanced program of work and also provides an outline of the process for finalizing that program with the program advisor.

When planning a program of work, students may consider including several opportunities to enhance their career outcomes. Full-time students are encouraged to take advantage of the careers program outlined in the College portion of this catalog. The Careers and Managing in a Changing Environment (MANA 5338) course provides opportunities for students to discover their own talents and abilities, identify appropriate careers, and explore marketplace opportunities. Such early career positioning allows students to focus their studies on those courses that will provide the most desirable skill sets. Additionally, students may select research topics and case presentations that will develop a strong industry awareness. Study abroad and internship opportunities also expand students' educational experiences on both a curricular and extracurricular basis. These special programs must be approved by the program advisor and included in the student's program of work.

Part-time students who are fully employed are encouraged to explore opportunities available in their organizations. Application of classroom information to the daily challenges faced in any business organization will expand students' education and career preparation. The career class (MANA 5338) will assist working students in seeking "best-fit" opportunities in their organizations.

Requirements for Electives

Students may take breadth electives in any of the curriculum areas of the MBA program. Students may take up to six semester hours in non-business coursework as part of their breadth electives, subject to the approval of the MBA program advisor.

A specialty in accounting requires a minimum of 12 semester hours beyond ACCT 5301 and ACCT 5302. Any four advanced accounting courses may be taken; however, it is recommended that the four courses be selected from the list below:

1. ACCT 5322 Accounting for Management Planning and Control
2. ACCT 5324 Financial Statement Analysis
3. ACCT 5330 International Accounting and Financial Reporting
4. Select one of the following:
   - ACCT 5314 Principles of Federal Income Tax
   - ACCT 5315 Accounting Systems Analysis
   - ACCT 5317 Cost Accounting
   - ACCT 5332 Operational Auditing

International Business Option

The international business option (INBO) attracts students from every continent and provides a comprehensive program of challenging study in international business administration. In this option, students may have a traditional MBA specialty (see above) or may choose a broad program of study with no specialty. Generally a student must complete a minimum of 3-4 courses from the international courses listed below in order to be considered as having elected this option.

Students are encouraged to enrich their international education by participating for graduate credit in established foreign exchange programs in Australia, England, France, Germany, Korea, Mexico, and Norway, or by gaining approval to participate in unique study abroad programs offered by other AACSB accredited schools. Appropriate foreign language proficiency must be demonstrated before attending programs in France, Germany and Mexico or when required by study abroad programs. Students are encouraged to participate for academic credit in international business internships available in the Metroplex or overseas as part of an established exchange or study abroad program.

MBA students may further enhance their international skills by participating in the dual degree program with Thunderbird University. Under this program, students may earn both an MBA (UT Arlington) and the Master of International Management (Thunderbird) degree. This program normally allows students to apply 12 hours of advanced coursework and all core requirements towards both programs. Students wishing to participate may obtain detailed information about the program from the Graduate Business Services Office in the College of Business Administration. Students must independently apply and gain admission to both programs.

Students planning a career in the international field are encouraged to pursue internationally related research topics while taking approved research courses. Research topics may include conducting an area study (Latin American, African, Asian, European, etc.). Students should also recognize the importance of those graduate courses in political science and history, or additional courses in undergraduate foreign languages, which would embellish their graduate studies.

ACCT 5330 International Accounting and Financial Reporting
ACCT 5348 International Tax
BLAW 5331 Law of International Business
ECON 5319 Economic Analysis of International Business
ECON 5321 International Trade and The Global Marketplace
ECON 5327 International Finance and Open Economy Macroeconomics
FINA 5331 Multinational Financial Management
FINA 5332 Seminar in International Financial Markets
MANA 5331 Management of International Operations
MARK 5331 International Marketing

Professional Management Electives

Students holding bachelor's or master's degrees in professional fields such as architecture, education, engineering, nursing, social work, and urban studies have the option of taking, with program advisor approval, up to 12 hours of approved breadth electives in their professional area as part of their MBA degree requirements. With these electives, professionals can develop advanced management skill in a functional area by declaring a 9-12 hour specialty, or pursue a more general management approach by declaring "no specialty."

Professional Cohort format (also referred to as CMBA or PMBA)

The professional cohort format of the MBA program is designed to provide high quality graduate business studies for working professionals who desire to continue their full-time employment. In this specially-designed, team-based (cohort) format, MBA courses are taken in sequence, in accelerated 5- or 8-week sessions, within each academic semester. This customized, sequential course delivery allows the team to complete their MBA degree in only 24 months.

This program is 45 semester hours for all students and is a traditional Master of Business Administration (MBA); therefore, the program includes the same general curriculum requirements as the MBA program detailed above.

Graduate Certificate Programs

Graduate Advanced Studies Certificate

Individuals who hold a graduate degree in business and wish to pursue additional graduate studies in business solely for the purpose of professional development may apply to the Master of Business Administration Program as a special student. Applicants should outline their professional development objectives in their written essay that accompanies their application. Additionally, they must meet all requirements for admission to the MBA program. Coursework in this program must meet the grade requirements of the Graduate School and be completed within a three year time-limit. A certificate will be granted upon successful completion of 12-21 hours of approved coursework in an area of business. Executives completing courses from two or more areas will be awarded a certificate in the area of executive development. Managers or functional specialists completing courses in one area of study will be awarded a certificate for their professional development area. Some courses taken under this program may not be applied in the future toward another graduate degree at this University.

Objective: Master of Business Administration Online (MBAO) Program

The MBA Online program in General Management provides today's students with the tools necessary to become leaders in the workplace of tomorrow. This challenging degree program pools the impressive resources and diverse perspectives of eight accredited University of Texas System institutions. Students will find a highly skilled, statewide team of professors presenting a broad, interactive curriculum. The program may be completed in as few as two or as many as six years.

Students apply for admission at any of the sponsoring institutions and receive their degrees from that university. To apply at The University of Texas at Arlington, students follow the same procedure required for the in-residence MBA (see the previous section titled Admissions). Applicants to the Online MBA program must specify on their application for admission that they are applying to the Online MBA program.

The Online MBA contains 16 courses (48 credit hours) all of which can be accessed entirely from remote locations. The program leads to an MBA with a specialty in General Management.

The program contains the following 16 courses:

*Accounting Analysis (UTD)
*Economic Analysis (UTD)
*Management (UTPA)
Quantitative Analysis (UTSA)
*Marketing Management (UTPB)
*Financial Management (UTA)
Research Methods (UTT)
Information Systems for Managers (UTEP)
Legal Environment in Business (UTB)
*Production and Operations Management (UTB)

Contemporary Topics in Financial Management (UTPB)
Accounting for Decision Making (UTSA)
Human Resource Management (UTT)
Leadership and Change (UTPA)
Global Strategic Management
Business Policy (UTA)

*denotes Core Courses

Note: UTA denotes classes offered by The University of Texas at Arlington; UTB denotes classes offered by The University of Texas at Brownsville; UTD denotes classes offered by The University of Texas at Dallas; UTEP denotes classes offered by The University of Texas at El Paso; UTPA denotes classes offered by The University of Texas at Pan American; UTPB denotes classes offered by The University of Texas at Permian Basin; UTSA denotes classes offered by The University of Texas at San Antonio and UTT denotes classes offered by The University of Texas at Tyler.

Up to four core courses may be waived based upon recent academic coursework and satisfactory grades. Two additional courses may be waived based upon courses taken in residence at The University of Texas at Arlington. A minimum of 8 courses (24 credit hours) must be taken online. Waivers and transfer credit follow the same regulations as the in-residence MBA (see the previous section titled Waivers and Transfer Credit). For more information, visit the UT TeleCampus Web site: **http://www.telecampus.utsystem.edu/**

Executive MBA Program

The Executive MBA (EMBA) program is designed to provide high-quality graduate management education to mid-level and upper-level managers and executives. The program covers all functional areas of business management and exhibits several content integrating themes associated with successful management of modern business organizations, including project management, international operations, total quality management, and strategic resource alignment.

A cohort-based design with a lock-step, fixed curriculum and heavy emphasis on case studies are prominent features of the EMBA program. Students, who are usually fully employed and sponsored financially by their organizations, enter the program as a group of 30 to 40 and progress through courses together. The schedule of classes is non-traditional and utilizes weekend and accelerated formats. Course content is delivered by the best faculty using methods that maximize student interaction and high levels of knowledge transfer to students' job situations.

Objective: Ph.D. in Business Administration

The objective of the Doctor of Philosophy in Business Administration degree is primarily to develop scholars with an ability to teach and conduct independent research in various areas of business administration. The program prepares students for careers as creative teachers and researchers by providing thorough preparation in both the theory and practice of business administration. The curriculum emphasizes and develops the rigorous analytical skills needed to make significant contributions in fields of business. Graduates of the program will assume significant roles in the world's educational and research institutions.

Coursework is offered in the following areas: accounting, banking and finance, business economics, business policy/strategic management, business statistics, personnel/human resource management, insurance and risk management, international business management, investments and securities, labor/industrial relations, management information systems, management sciences, marketing management and research, organizational behavior, organizational theory, production/operations management, real estate, small business management and ownership, and taxation. Coursework in these areas of study supports the following major fields: Accounting, Economics, Finance, Information Systems, Management, Marketing, and Operations Management.

Admission

Admission to the Ph.D. program is based upon the completion of the general admission requirements of the Graduate School. For Ph.D. program admission a score on the Graduate Management Admission Test (GMAT) or Graduate Record Exam (GRE), and a record of undergraduate and master level academic performance are required. Students for whom English is not their native language must achieve a TOEFL score of at least 550. International applicants that score below minimum acceptable levels on the verbal portion of entrance examinations may be admitted under the condition that they pass an English proficiency exam or complete UT Arlington's Graduate English Skills Program prior to beginning graduate coursework. Applicants are encouraged to submit with their application a resume that highlights professional and personal accomplishments, linguistic abilities, computer expertise and leadership experience. A standardized test score (GMAT or GRE) will not be used as the sole or primary criterion for denying an applicant's admission to the Ph.D. program.

Specifically, multiple criteria are used to make admission decisions. Quantitative measures include an applicant's GMAT or GRE score and grade point averages on undergraduate and master level work as calculated by the Graduate School. No formula is used nor weights assigned to these factors. The Ph.D. Graduate Studies Committee and the field coordinator for the student's track in the Ph.D. program give consideration to these and other factors (educational objectives, letters of recommendation, etc.) in the entire file to arrive at a decision. Interviews with prospective students are encouraged and given consideration in the decision process. There are no set minimum scores for GMAT or GRE required for admission and no cutoff scores on grade point averages. Prospective students are encouraged to work with their track's field coordinator to work through the admission process.

Categories of Admission Decisions

An applicant is unconditionally admitted when all factors for consideration indicate very strong potential for academic success as a business doctoral student. When multiple factors indicate lack of potential, admission will be denied. Probationary admission is not available for the doctoral program.

A provisional decision to admit may be granted when the applicant meets criteria for unconditional admission but an item of applicant information has not been received by the Graduate School. A deferred decision may be made when an applicant's file is not sufficiently complete to make an admit or deny decision.

University and College Fellowship/Scholarship Awards

Doctoral students who are newly admitted, have a minimum undergraduate grade point average of 3.0 as calculated by the Graduate

School (and 3.0 at the graduate level), and enroll for a minimum of six semester credit hours will be eligible for available fellowship and/or scholarship support. A standardized test score (GMAT or GRE) will not be used as the sole criterion for determining fellowship and/or scholarship eligibility.

Degree Requirements

All students must complete work in three fields: a major (dissertation) field, a minor field, and a research field. A minor field may be external to the College of Business Administration. Examples are industrial engineering, mathematics, computer science, sociology, and psychology. The student must petition for approval of an external minor field.

The following minimum semester hours must be included in the student's Program of Study.

	Minimum Semester Hours
Business Foundation	*
Major Field	18**
Minor Field	12**
Research Field	15**
Dissertation	18

*From 0-15 hours depending upon the student's background at the time of admission to the doctoral program.

**Previous equivalent advanced coursework may be accepted.

Residence Requirements

Each student enrolled in the doctoral program must enroll for and successfully complete a minimum of 15 hours in one 12-month period prior to completion of the comprehensive examinations. Each student must enroll for at least 12 hours every year. All students enrolled in the program must successfully complete all coursework and comprehensive examinations within a maximum of 60 months from initial enrollment in the program. A minimum of 24 graduate hours in residence, excluding dissertation, are required for all candidates.

Diagnostic and Annual Performance Evaluations

All doctoral students are expected to show steady progress toward their degree and to demonstrate satisfactory advances in their ability and motivation to conduct independent research throughout their program. During a student's program, a diagnostic evaluation will be conducted near the end of the first year, but no later than 24 credit hours. After the first year, an annual performance evaluation will take place each subsequent year. The evaluation will be conducted by the major area Ph.D. advisor in consultation with a faculty committee. If the student has not yet passed all comprehensive examinations or does not have a formal dissertation committee, the faculty committee will consist of the faculty in the major area. If the student has passed all comprehensive examinations and has a formal dissertation committee, the faculty committee will consist of the Dissertation Committee.

Upon completion of the evaluation, a recommendation of continuation or discontinuation in the program is made to the College of Business Administration Ph.D. program director for a final decision. For a discontinuation decision resulting from the first year diagnostic evaluation, the student will immediately be discontinued in the Ph.D. program. For a discontinuation decision in the annual performance review in the second year and beyond, the student will have one regular semester (Fall or Spring) to demonstrate satisfactory improvement in their performance. At that time the major area Ph.D. advisor in consultation with the appropriate faculty committee, and the Ph.D. program director, will make a final decision on whether the improvements are satisfactory. An unsatisfactory decision at that time will result in the immediate discontinuation of the student in the program.

During the diagnostic and annual performance reviews, reasons for poor performance include: grade point averages below minimum GPA requirements, unsatisfactory progress in completing coursework, unsatisfactory progress in completing dissertation, and inadequate demonstration of ability and motivation to conduct independent research.

Comprehensive Examinations

Students must demonstrate competence in their major, minor, and research fields by the successful completion of written examinations. Written comprehensive examinations in each field will be given at the start of each fall and spring semester of each year and may be given during the summer term. A student is eligible for a written comprehensive examination when that student has completed (1) the Business Foundation with a GPA of at least 3.25 and (2) prescribed coursework in the field. A research publication option may also satisfy the minor comprehensive examination.

If a student fails a written comprehensive examination and continues in that field, the examination must be retaken within a period of not more than 13 months. If a student fails a second comprehensive examination in a major or research field, that student will not be permitted to continue in the program. If a student twice fails a written comprehensive examination in a minor field, that student will not be permitted to continue in that field.

A student must complete all written examinations within 25 months or retake any examinations which fall outside the 25-month period. When a student successfully completes all the written examinations, that student is scheduled for a comprehensive oral examination which is administered by the student's Supervisory Committee. A student who fails the comprehensive oral examination is given a second oral examination within 12 months of the date of the first examination. If a student fails the second comprehensive oral examination, that student will not be permitted to continue in the program.

Upon successful completion of written and oral comprehensive examinations, the student is admitted to candidacy.

Dissertation

The Dissertation Committee consists of a minimum of five members. The chair of the Dissertation Committee must be from the major field. At least one member of the committee must be from the research field and one member of the committee must be from outside the major field. With the approval of the Graduate Dean, one of the five members may be a nationally or internationally recognized non-UT Arlington scholar.

Following completion of the comprehensive examinations, students will be required to enroll for at least nine hours of dissertation each regular semester and at least six hours each summer until completion of the dissertation. See Doctoral Requirements for Dissertations at the front of this catalog for exceptions. Students must register for

a minimum total of 18 semester hours of dissertation and must be enrolled for a minimum of nine hours of dissertation in the semester in which they defend the dissertation.

The dissertation must be completed within four years of the oral comprehensive examination.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Executive MBA (EMBA)

5201. ASSESSING LEADER STYLE, BEHAVIOR, AND RESULTS (2-0). "Strength based leadership" recognizes that there are many different aspects of leadership such as an individual's personality, skills, experience, creativity, personal integrity, initiative, and environment. Using a battery of leadership assessment tests, participants will explore their own strengths (and weaknesses) and the impacts these have on their personal leadership style.

5206. BUILDING AN INTELLIGENT AND INNOVATIVE ENTERPRISE (2-0). Students investigate an organization's effort to build an intelligent and innovative enterprise, how to deploy strategic information technologies (IT), and how to launch IT-enabled new products and services. Students explore how strategic IT can help the organization to become structurally more competitive and culturally more innovative through the development of knowledge management systems.

5207. DESIGNING GLOBAL SUPPLY CHAINS FOR COMPETITIVE ADVANTAGE (2-0). Students learn how to analyze logistics problems on a functional, business, and companywide basis and gain an understanding of the organizational structures used in logistics, how to select a multinational location site, how to configure global-scale facilities, and ways to develop international sourcing networks.

5211. COMPETING IN A GLOBAL ENVIRONMENT (2-0). With an ever-growing number of industries becoming global in scope, managers are being increasingly challenged to manage strategies within a global perspective. This course provides participants with the skills, knowledge and sensitivity required to successfully manage organizations and organizational units within a multinational environment.

5212. BUILDING HIGH PERFORMANCE TEAMS (2-0). One of the most difficult challenges that business leaders face is developing talented managers into a high performance executive team. This becomes even more critical in a multi-national environment. This module focuses on the strategic management of human resources for building effective teams, retaining high performers, and managing people for gaining competitive advantage.

5302. INTERNATIONAL POLITICAL ECONOMY AND GLOBAL BUSINESS (3-0). This module provides a detailed review of world economic development and international managerial economics. Multinational trade, international finance, and country economic development are critically examined using a comparative perspective, including gateways and barriers to entering country markets.

5303. OPTIMIZING QUALITY AND PROCESS WITH ACCOUNTING INFORMATION (3-0). Modern tools for meeting the competing challenges of organizational cost minimization are explored within an environment that demands near-perfect quality standards. Emphasis is on leveraging accounting information for decision making, strategic management, and for the control of processes and organizations.

5304. MAKING STRATEGIC DECISIONS WITH FINANCIAL DATA (3-0). Practical analytical skills needed to manage the financial and tangible resources of a firm are presented. Students gain exposure to the fundamentals of asset valuation models, financial forecasting, risk management, capital structure alternatives, cash flow management, reporting and disclosure issues, liability identification, and equity development.

5305. UNDERSTANDING ETHICAL DIMENSIONS OF BUSINESS (3-0). Leaders face many challenges. Not the least of these are the challenges that rapid growth, personal wealth, and stockholder/stakeholder pressures place on executives. This course explores these issues with emphasis on the ethics of managerial decision making, creating ethical environments for employees, establishing expected norms of behavior, and the consequences of unethical behavior.

5308. CREATING CUSTOMER VALUE (3-0). This course focuses on strategies and tactics to create customer value and build long term relationships to meet organizational goals. Students are exposed to tools that enable managers to understand the ever-changing marketplace and then build an effective marketing strategy to meet corporate goals. Not all customers are profitable or perhaps desirable. Customer management strategies to build marginal buyers into desired customers are also covered.

5309. ACCESSING CAPITAL MARKETS FOR GLOBAL OPERATIONS (3-0). Effective utilization of capital markets, both domestic and foreign, is essential for a thriving firm. Leaders must be able to assess relative benefits and costs of bother short-term and long-term sources of expansion capital not only within their home markets but also within the context of global markets. Evaluation of and access to foreign capital markets requires an understanding of characteristics of international financial instruments, the operation and structure of foreign capital markets and fundamentals of measurement and management of foreign exchange exposure.

5410. DEVELOPING STRATEGIES FOR COMPETITIVE ADVANTAGE (4-0). This course seeks to broaden students' perspectives of competitive strategy and encourage development and understanding of how firms create and reinforce a competitive advantage in the marketplace. Conceptual tools associated with the understanding of industry and industry dynamics are explained with the assessment of core competencies. Students learn how to evaluate key competitors in the formulation and implementation of "winning" strategies.

5413. EXPERIENCING THE GLOBAL ENVIRONMENT: INTERNATIONAL PROJECT (4-0). A key factor in determining the ultimate success of a business plan to penetrate a global market is a thorough understanding of the local culture. Immersion in a culture is an excellent way to gain an appreciation of local customs and traditions. Students will create a business plan for a U.S.-based company to enter a foreign market and participate in a ten day to two week study abroad.

UT TeleCampus Online MBA (MBAO)

6311. ACCOUNTING ANALYSIS (UT Dallas). The course is designed for managers who will use, not prepare, accounting information. It consists of 3 modules: Financial Accounting, Cost Management and Management Control.

6312. ECONOMIC ANALYSIS (UT Dallas). The emphasis of this course will be on fundamental aspects of economic analysis relating to individual firms and individual markets. The student will learn the impact of demand, how firms choose prices, the role of costs, the nature of competition and monopoly, the role of property rights, simple network economics, and basic antitrust. Although not heavily used in the course, some reference will be made to calculus.

6313. MANAGEMENT (UT Pan American). An analysis of formal organizational theory and the interrelationship of individuals in organizations. A study of the organization as a system of authority, status, leadership, direction, culture, ethics, communication and influence.

6314. QUANTITATIVE ANALYSIS IN BUSINESS (UT San Antonio). Introduction to managerial decision analysis using quantitative tools. Topics include a general framework for decision analysis, decision tables and trees, simulation, linear programming and related techniques, classical optimization, forecasting, and probabilistic and statistical techniques. Uses applicable decision support software. Emphasis is on applications.

6315. MARKETING MANAGEMENT (UT Permian Basin). An overview of the theory and practice of marketing. Study of the impact of organization structures and processes on the performance of organizational members. The practice of analytic and decision-making skills will be emphasized.

6316. FINANCIAL MANAGEMENT (UT Arlington). The study of providing an organization with operating funds and effectively utilizing monetary resources. Primary emphasis on financial decision making within organizations and techniques of financial analysis and forecasting.

6331. RESEARCH METHODS (UT Tyler). The application of research techniques to business decision making. Study of the scientific method: definition of survey, development of methodology, evaluation of alternatives, findings, summary, conclusions and recommendations.

6332. INFORMATION SYSTEMS FOR MANAGERS (UT El Paso). This course will look at technology at a macro level. Each module examines the impact of today's information systems on organizations, education, government, culture, society, and the future.

6333. LEGAL ENVIRONMENT IN BUSINESS (UT Brownsville). The course will introduce the student to fundamental legal issues confronting managers in the contemporary American and global legal environment.

6334. PRODUCTION AND OPERATIONS MANAGEMENT (UT Brownsville). The study of the role of the production function in the business system and its relationship to marketing and finance. The focus is on the decision making necessary for productivity improvement in the transformation process of manufacturing and non-manufacturing service organizations. Strategies of production system design, capacity management, quality management, production planning, inventory planning and control, facility location and supply chain management are explored. Systems studied include Just-in-Time, Total Quality Management and Flexible Manufacturing Systems.

6335. CONTEMPORARY TOPICS IN FINANCIAL MANAGEMENT (UT Permian Basin). The study of topics recently published in financial management literature. The topics will be selected from international, corporate, risk management topics and vary from term to term.

6336. ACCOUNTING FOR DECISION MAKING (UT San Antonio). An online version of ACC 5023, Accounting Analysis for Decision Making, which is a required course in the resident MBA program in the College of Business at the University of Texas at San Antonio. Prerequisite: 6311 Accounting Analysis or its equivalent.

6371. HUMAN RESOURCE MANAGEMENT (UT Tyler). Advanced study of selected topics in human resource management with special emphasis on issues of current importance in the field. Topic areas in such human resource functions as staffing, development, appraisal, and compensation will be covered.

6372. ORGANIZATIONAL LEADERSHIP AND CHANGE (UT Pan American). This course is designed to provide a broad overview of Leadership and Organizational change theories, practices, and research. Special attention will be given to critical thinking skills and the students' ability to communicate and lead effectively in the discussion chat room format.

6373. GLOBAL STRATEGIC MANAGEMENT (UT El Paso). Participants will be able to perform environmental scanning through the understanding of the elements of corporate, competitive and operational environments. Participants will be exposed to different tools for evaluation of opportunities and threats and for identifying sources of strategy. Students will have "hands-on" experience through a computer simulation. This simulation will provide participants the experience of working in teams. Teams will make competitive decisions about a global organization.

6374. OPTIONS AND FUTURES (UT Permian Basin). Introduction to options, futures, and other derivative securities. Topics include option valuation models, principles of forward and futures pricing, structure of markets for derivative securities, and strategies for hedging and speculation.

6375. PORTFOLIO THEORY AND MANAGEMENT (UT Permian Basin). A comprehensive investigation of modern portfolio theory. Unifying theme: optimization of the trade-off between risk and return. Examination of asses pricing models and security analysis issues within this framework. Course culminates in a discussion of portfolio management and performance evaluation.

6376. INTERNATIONAL FINANCE (UT Permian Basin). A comprehensive study of international financial markets that covers currency exchange mechanisms in theory and practice, including international monetary systems; offshore financial markets; and currency risk management, including interest rate and currency futures, options, and swaps.

6395. BUSINESS POLICY (UT Arlington). The primary thrust of this course is general management. It will be different from most of the courses you have had in the functional areas (e.g., accounting, marketing) because you will be required to use a wide range of business knowledge and exhibit diverse skills. Therefore, it will be demanding and challenging because you will have to perform in topic areas where you have both strengths and weaknesses.

Doctoral Courses (BSAD)

6310. FOUNDATIONS OF SCIENTIFIC INQUIRY (3-0). The evolution of the modern corporation is briefly addressed. The core topics include the structure of explanation, the structure of scientific laws, theory building, philosophy of science and relativistic/post-relativistic philosophies of science.

6311. EXPERIMENTAL DESIGN (3-0). In-depth coverage of selected topics in the design of research and analysis of data; topics include philosophy of science, theory of measurement, complex experimental and quasi-experimental designs.

6312. REGRESSION (3-0). The theoretical and practical aspects of regression analysis. Topics include simple and multiple linear regression, the matrix formulation of regression models, regression diagnostics and remedial measures, collinearity and ridge regression, normal correlation models, and non-linear least squares, time series including ARIMA models are covered. Practical applications of statistical software packages are emphasized.

6313. ANOVA (3-0). Experimental design and data analysis, especially as related to business and economic research. Topics include completely randomized designs, complete and incomplete blocks, nested designs, estimation and testing of fixed, random and mixed effects, sampling, nonparametric statistics and analysis of variance.

6314. MULTIVARIATE STATISTICS (3-0). Focuses on methods of analyzing mean and covariance structures. Topics include commonly applied multivariate methods such as multiple analysis of variance, repeated measures, discriminant analysis, profile analysis, canonical correlations and factor analytic methods. The use of matrix algebra and available computer packages will be stressed.

6315. TIME SERIES (3-0). Univariate and multivariate time series; analysis of economic and financial data; out-of-sample forecasting using computer software. Autoregressive-moving average models, vector autoregression, unit roots, co-integration, ARCH and GARCH.

6316. FINANCIAL ECONOMETRICS (3-0). In-depth study of the econometric tools and techniques used in empirical finance research. Course emphasizes data extraction and analysis of common finance databases, as well as the theoretical basis for current empirical finance techniques and methods.

6317. ECONOMETRICS (3-0). Statistical methods applied to business and economic problems; topics include multiple regression, generalized linear regression, systems estimation.

6392. DOCTORAL RESEARCH AND TEACHING COLLOQUIUM (3-0). Review of the research process and contemporary developments in the methodology and design of empirical research in the major fields of study represented in the doctoral program. Review of teaching methods for effective classroom instruction. May be repeated for credit.

6399. DISSERTATION (3-0).

6699. DISSERTATION (6-0).

6999. DISSERTATION (9-0).

For all other graduate courses, see course listings for the following departments: Accounting, Economics, Finance and Real Estate, Information Systems and Operations Management, Management and Marketing. If a course is not approved for the MBA or Ph.D. program, a statement to that effect is included in its course description. 6000-level courses may not be taken without the permission of the major field coordinator or the Director of the Doctoral Program.

Objective

The Master of Arts is an applied economics program. As a "terminal" degree program, it teaches marketable skills for employment in business or government. The program consists of a solid analytical core in economics and quantitative methods, supplemented with courses in special fields. Potential specialization areas currently emphasized are forecasting/quantitative techniques, international business economics and applied financial economics. The program is also recognized nationally for preparing students who want to pursue the Ph.D. degree in economics.

Economics is one of the areas a student may choose to study in the Doctor of Philosophy in Business Administration program. Additional information concerning the doctoral program is presented in the catalog under the heading Business Administration.

Admission Requirements

Admission to the M.A. program in economics is based upon the completion of the general admission requirements of the Graduate School. For admission to the M.A. program in economics, a score on either the Graduate Management Admission Test (GMAT) or the Graduate Record Examination (GRE) and record of one's academic undergraduate performance are required. Students for whom English is not their native language must achieve a TOEFL score of at least 550 (213 on computer-based test). International applicants who score below minimum acceptable levels on the verbal portion of entrance examinations may be admitted under the condition that they pass an English proficiency exam or complete UT Arlington's Graduate English Skills Program prior to beginning graduate coursework. Applicants are encouraged to submit with their application a resume that highlights professional and personal accomplishments, linguistic abilities, computer expertise and leadership experience. A standardized test score (GMAT or GRE) will not be used as the sole criterion for denying an applicant's admission to the M.A. program in economics.

Multiple criteria are used to make admission decisions. Unconditional acceptance is based on consideration of all the information listed below and the decision to deny admission is not based on any single criterion alone.

1. A bachelor's degree from an accredited general or specific program.
2. An acceptable undergraduate GPA as calculated by the Graduate School, generally greater than a 3.0 on a 4.0 scale.
3. An acceptable score on the Graduate Record Examination or GMAT. Successful students generally have a minimum score of 600 on the Quantitative section and 450 on the Verbal section of the GRE or a minimum score of 480 on the GMAT.
4. Favorable letters of recommendation from at least three individuals able to assess the applicant's potential success in graduate school.
5. Grades in specified undergraduate business and non-business courses (e.g., math, accounting, economics, statistics).
6. For applicants whose native language is not English, a minimum score of 550 on the Test of English as a Foreign Language (or an equivalent score on a computer-based test) or a score of 40 on the Test of Spoken English.

Probationary Admission

If an applicant does not meet items 1 through 6 for unconditional admission, they may be considered for probationary admission after careful examination of their application materials. Probationary ad-

Department of Economics

Areas of Study and Degrees

Economics
M.A.

Business Administration
M.B.A., Ph.D.
(See Program in Business Administration)

Master's Degree Plans

Thesis and Non-Thesis

Chair

Daniel Himarios
309-C Business
817.272.3061

Graduate Advisor

Roger Wehr
301 Business
817.272.3287

Graduate Faculty

Professors
Amacher, Himarios, Meiners

Associate Professors
Crowder, Ward

Assistant Professors
LaFountain, Koc, Smallwood, Papanyan, Choi, Yasar, DeSimone

Visiting Assistant Professor
Wunder

mission requires that the applicant receive a B or better in the first 12 hours of graduate coursework at UT Arlington.

Deferred and Provisional Admission

A deferred application decision may be granted when a file is incomplete or when a denied decision is not appropriate. An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission.

Denial of Admission

A candidate may be denied admission if he or she has less than satisfactory performance on a majority of the admission criteria.

Fellowships and Scholarships

Students admitted with no provisional conditions to satisfy are eligible for available scholarship and/or fellowship support. A limited number of merit-based scholarships and fellowships may be awarded to graduate students enrolled in a minimum of 6 hours of coursework in both long semesters.

Degree Requirements

Master's Degree with Thesis

A minimum of 30 semester hours of coursework and a minimum of 6 semester hours of thesis study are required. Students typically develop a thesis topic in consultation with a faculty member and formally propose the topic to a thesis committee prior to enrolling in thesis hours. The core course requirements are ECON 5301 or equivalent, 5310, 5312, and 5336. Six hours of electives in economics must be chosen. The remaining six hours of electives may be a combination of courses in economics or in a minor field. A maximum of nine hours of advanced undergraduate courses may be taken for graduate credit, with the approval of the Graduate Advisor. Not more than six hours of such courses may be in either the major or the minor field.

Master's Degree, Non-thesis

The non-thesis degree requires a minimum of 36 semester hours of coursework, including a core of ECON 5301 or equivalent, 5310, 5312, 5336 and 5329. The total may include up to 12 semester hours in supporting subjects with the approval of the Graduate Advisor. A maximum of nine semester hours of advanced undergraduate work may be taken for graduate credit, with the approval of the Graduate Advisor. Successful completion of ECON 5329 satisfies the Graduate School requirement of a final master's examination.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Economics (ECON)

5199. GRADUATE ECONOMICS INTERNSHIP (1-0). Practical training in economics. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

5299. GRADUATE ECONOMICS INTERNSHIP (2-0). Practical training in economics. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

5301. MATHEMATICS FOR ECONOMISTS (3-0). Designed to upgrade mathematical skills for graduate work in economics and business. Prerequisite: MATH 1302.

5306. ENVIRONMENTAL ECONOMICS (3-0). This course examines economic theory and practice as it applies to environmental regulation, policy, and management. Prerequisite: ECON 5311.

5310. MICROECONOMIC THEORY (3-0). Theories of consumer choice and of the firm; marginal productivity and functional distribution; general equilibrium of production, consumption, and exchange. Prerequisite: ECON 3310.

5311. ECONOMIC ANALYSIS (3-0). Provides an overview of microeconomic foundations of economic analysis with a focus on business applications. Topics include supply and demand, marginal analysis, pricing issues and theory of the firm. An overview of macroeconomics is also provided, covering monetary and fiscal policy, inflation, growth and international trade. Non-credit for MA in Economics.

5312. MACROECONOMIC THEORY (3-0). Study of the aggregate approach to the economy and the tools of analysis used for the solving of national economic problems. Prerequisite: ECON 3312.

5313. MANAGERIAL ECONOMICS (3-0). Application of economic analysis in formulating business decisions, drawing upon the theoretical foundations of the concepts of demand, cost, production, profits, and competition, with special emphasis on case studies. Prerequisite: ECON 5311.

5314. ECONOMICS OF ORGANIZATION AND BUSINESS STRATEGY (3-0). Economic theories of firm and industry behavior include the organization of the firm, oligopoly behavior, strategic behavior, mergers and acquisitions, and technological competition. Prerequisite: ECON 5311.

5315. ECONOMICS OF TECHNOLOGY AND INNOVATION (3-0). Examines technology and innovation using the tools of microeconomics. Analyzes the effects of technology on industrial market structure, firms' strategies and public policy. Topics include determinants of innovation, industry evolution, managing firm boundaries, intellectual property, and managing technological processes. A sub-

stantial amount of time will focus on modern industries including telecommunications, e-commerce, software, entertainment, pharmaceuticals, and biotechnology. Prerequisites: ECON 5310 or ECON 5311 or ECON 5313.

5318. ECONOMICS OF SPORTS (3-0). Applies basic economic principles to the analysis of professional and amateur sports. Topics covered include fan demand, advertising, team output decisions, league/conference organization, and government and sports. The course is designed to cater to both general business and economics majors. Prerequisite: ECON 5311.

5319. THE GLOBAL ECONOMY (3-0). Study of growing global economic integration. Tools are developed to undertake a critical examination of integration from both the international trade and international finance sides. Topics include the movement towards increasing free trade and free trade areas, trade and government policy harmonization, exchange rate policy, single currency areas, and positive and negative spillover effects of short- and long-run economic changes. Special attention will be paid to free trade areas such as NAFTA, economic unions such as the European economic area, and the costs inherent in increased economic integration, e.g., the Southeast Asian Crisis. Prerequisite: ECON 5311.

5321. INTERNATIONAL TRADE AND THE GLOBAL MARKETPLACE (3-0). Examines the theory and policy of international trade and public policy. The theory portion explains the causal factors that determine the size, composition, and direction of international economic transactions. Special attention is paid to the theory of economic integration and its direct application to the EU, NAFTA, and other economic blocs. The policy portion studies the role of governments in their efforts to regulate, restrict, promote, or influence the conduct of international trade and investment. Prerequisite: ECON 5311.

5327. INTERNATIONAL FINANCE AND OPEN ECONOMY MACROECONOMICS (3-0). Study of international money and capital markets. Determination of output, balance-of-payments and exchange rates under different monetary and exchange rate regimes. Exchange rate intervention by central banks and exchange rate systems in developing countries are also discussed. Prerequisite: ECON 5311.

5329. RESEARCH METHODS IN APPLIED ECONOMICS (3-0). Research problems and methods most commonly encountered by economists in industry and government; specific research projects required in applied areas such as corporate planning, utility rate analysis, manpower planning, micro- and macro-forecasting, etc.; emphasis on practical research methods and on the presentation of results in coherent written reports. Prerequisites: ECON 5310 and ECON 5312 and ECON 5336.

5330. HUMAN RESOURCE ECONOMICS (3-0). Economic analysis of the supply of labor, the allocation of labor among alternative uses, investment in human capital, the extent and incidence of unemployment, and the determination of wages. Prerequisites: ECON 5311.

5331. URBAN ECONOMICS (3-0). Develops the modern analysis of urban problems and goals with special attention given to those factors that influence the economic development of urban communities and the quality of urban life. Attention is also given to policy formulation as a means for urban problem solving. Prerequisites: ECON 5311.

5332. GOVERNMENT, TAXES AND BUSINESS STRATEGY (3-0). The interaction between government and business is broad. Effective business leadership requires the ability to analyze and respond to public policy. Economics provides a framework for understanding the incentives of consumers, businesses, bureaucrats and civil servants in different policy environments and predicting their behavior in response to policy changes. This course focuses primarily on tax policy at the federal, state and local levels, including issues in corporate taxation, personal income tax, treatment of capital gains and loses, tax incidence, work-leisure choices, fiscal competition among state and local governments, capital flight and fiscal federalism. Prerequisite: ECON 5311.

5333. ECONOMICS OF HEALTH (3-0). Employment of economic theory to analyze the health sector and consider problems such as rising prices and maldistribution of resources. Topics include methods of policy evaluation, impact of prospective payment and managed care, productivity, determinants of health. Prerequisite: ECON 5311.

5336. ECONOMETRICS (3-0). Statistical methods applied to business and economic problems; topics include simple regression, multiple regression, heteroskedasticity, autocorrelation, data measurement, functional forms, generalized linear regression, seemingly unrelated regressions and systems estimation. Prerequisites: ECON 5301 and STAT 5301.

5337. BUSINESS AND ECONOMIC FORECASTING (3-0). Econometric model-building and forecasting with applications to business and economics. Single equation models, multiple equation models, and time-series models are covered with emphasis on practical problems in analysis and forecasting. Prerequisite: STAT 5301.

5338. MODERN APPLIED TIME SERIES (3-0). Univariate and multivariate time series, analysis of economic and financial data, out-of-sample forecasting using computer software. Autoregressive-moving average models, vector autoregression, unit roots, co-integration, ARCH and GARCH. Prerequisite: ECON 5336.

5382. INDEPENDENT STUDIES IN ECONOMICS (3-0). Extensive analysis of an economic topic. Prerequisite: Departmental Permission Required.

5391. SPECIAL TOPICS IN ECONOMICS (3-0). In-depth study of selected topics in economics. May be repeated when topics vary. Prerequisite: Departmental Permission Required.

5398. THESIS (3-0). Graded R/F only. Prerequisite: Permission of Graduate Advisor in Economics.

5399. GRADUATE ECONOMICS INTERNSHIP (3-0). Practical training in economics. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

5698. THESIS (6-0). Graded P/F/R. Prerequisite: Permission of Graduate Advisor in Economics.

5998. THESIS (9-0). Graded P/F/R. Prerequisite: Permission of Graduate Advisor in Economics.

6310. ADVANCED MICROECONOMIC THEORY (3-0). Investigates the advanced neoclassical theory of microeconomics. The course develops formal models of consumer behavior, market structure, general equilibrium and welfare. The objective of the course is to acquaint students with the analytical tools necessary to evaluate the formal literature in economics and to conduct scientific, hypothesis- driven statistical studies. Prerequisites: ECON 5301 and ECON 5310.

6312. ADVANCED MACROECONOMIC THEORY (3-0). Topics include dynamic general equilibrium analysis of model economies, monetary theory in overlapping generations models, advanced growth theory and new open-economy macroeconomics. Prerequisites: ECON 5301 and ECON 5312.

Department of Finance and Real Estate

www.uta.edu/finance
www.uta.edu/realestate

Areas of Study and Degrees
Quantitative Finance
M.S.
Real Estate
M.S.
Graduate Certificate in Real Estate Development
Business Administration
M.B.A., Ph.D.
(See Program in Business Administration)

Master's Degree Plans
Thesis and Non-Thesis

Chair
J. David Diltz
434 Business
817.272.3705

Graduate Advisors
M.S. Quantitative Finance
David Diltz
434 Business
817.272.3705

M.S. Real Estate
Graduate Certificate in Real Estate Development
J. Andrew Hansz
434 Business
817.272.3705

Ph.D. Coordinator
Salil K. Sarkar
434 Business
817.272.3705

Graduate Faculty
Professors
Apilado, Diltz, Swanson

Associate Professors
Hansz, Sarkar

Assistant Professors
Gallo, Hayunga, Lung, Sabherwal, Shi, Yong

M.S. in Quantitative Finance

Objective

The Department of Finance and Real Estate participates in several graduate degree programs including the Ph.D. in Business Administration, the Master of Business Administration, the Master of Science in Quantitative Finance and the Master of Science in Real Estate. In the Ph.D. in Business Administration, courses in finance and real estate prepare students for careers in teaching, research, business, and government. Concentrations in both finance and real estate are offered in the M.B.A. program (see Interdepartmental and Intercampus Programs for degree requirements). The M.S. in Quantitative Finance provides an in-depth exposure to the quantitative aspects of finance. The M.S. in Real Estate provides students in-depth training in real estate decision making.

The Master of Science in Quantitative Finance degree program is designed to meet the growing demand for financial professionals equipped to implement state-of-the-art analytical techniques in support of financial decision-making. Students complete a rigorous seven-course sequence that includes: finance theory, mathematical finance, financial modeling, economic theory, and econometrics. Students then complete a five-course elective program designed jointly by the student and the program advisor. The Master of Science in Quantitative Finance degree program is a specialized degree program designed to build upon the candidate's prior background.

Accreditation

The Master of Science in Quantitative Finance is accredited by the AACSB–The International Association for Management Education.

Admission

Admission to the M.S. in Quantitative Finance (MSQF) program is based upon the completion of the general admission requirements of the Graduate School. A record of one's undergraduate academic performance and a score on the Graduate Management Admission Test (GMAT) are required for consideration for admission into the MSQF program. Preference is given to individuals having extensive mathematics or computer science backgrounds. Students whose native language is not English must document a TOEFL score of at least 550. International applicants scoring below acceptable levels on verbal portions of entrance examinations may be admitted conditional upon passing an English proficiency exam or upon completing the University's Graduate English Skills Program prior to beginning graduate coursework. Applicants should submit a current professional resume that highlights professional accomplishments, language skills, computer skills, and leadership (and other interpersonal) skills. The GMAT score shall not be used as the sole criterion for denying an applicant's admission into the MSQF program.

Multiple criteria are used in the admissions decision. Unconditional acceptance is based on the factors listed below. Denial of admission is not based on any single factor.

1. An undergraduate GPA of at least 3.0 on a 4.0 scale as calculated by the Graduate School.
2. An acceptable score on the GMAT. Successful applicants generally have a GMAT minimum score of 600.
3. Mathematics coursework through multivariate calculus (calculus III).
4. A satisfactory one-page essay outlining the role that the MSQF degree is intended to play in the applicant's career objectives.

5. Positive letters of recommendation from three persons familiar with the applicant's academic background and/or work experience.
6. Grades in advanced undergraduate coursework.
7. Professional work experience.

Unconditional Admission

For unconditional admission, items 1 through 6 above should indicate strongly the potential for successful academic performance at the Master's level. Students who are unconditionally admitted, have a minimum undergraduate grade point average of 3.0 as calculated by the Graduate School (or 3.0 at the graduate level), and enroll for a minimum of six semester credit hours will be eligible for available fellowship and/or scholarship support. A standardized test score (GMAT) will not be used as the sole criterion for determining fellowship and/or scholarship eligibility.

Probationary Admission

An applicant deemed deficient in one or more of the above criteria may be considered for probationary admission upon careful review of his/her materials. An applicant admitted under this provision shall be expected to complete his/her first 12 hours of coursework with a grade of B or better.

Provisional, Deferred and Denied Admission

Provisional admission may be granted if an applicant is unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements. A deferred decision may be granted when a file is incomplete or when denial is inappropriate.

An applicant will likely be denied admission when three or more of items one through six above indicate lack of potential for success in the program. All applicant data will be evaluated carefully before a denial is issued.

Degree Requirements

The M.S. in Quantitative Finance is designed to provide a specialized, highly analytical graduate education to financial managers, financial analysts, and technical personnel. The program consists of 36 credit hours of coursework in finance, economics, mathematics, statistics, and computer science. All students will complete a twenty-one-hour set of foundation classes consisting of:

ECON 5310 Microeconomic Theory
FINA 5323 Investments
FINA 5327 Financial Derivatives
FINA 5330 Real Options
FINA 5350 Mathematical Finance
FINA 5351 Financial Modeling
FINA 5392 Financial Econometrics

The remaining fifteen-hours of coursework are selected by the student, subject to the approval of the program advisor. Courses will be chosen from a list that includes: (1) finance elective classes (international finance, financial institutions, capital markets, real options, and capital budgeting), (2) economics (macroeconomic theory, econometrics, time series analysis), (3) mathematics (advanced calculus, real analysis, differential equations, stochastic processes, and numerical methods), (4) statistics (probability theory, mathematical statistics), and (5) computer science (programming languages, numerical methods, parallel processing, software engineering).

Students who do not have the appropriate background may have to take additional foundation coursework. Quantitative background appropriate to begin the MSQF program consists of a minimum of 6 credit hours of calculus and 3 credit hours each in linear algebra, statistics, and computer programming. Other foundation coursework would include at least 3 credit hours each of microeconomics and finance.

M.S. in Real Estate

Objective

The Department of Finance and Real Estate participates in several graduate degree programs including the Ph.D. in Business Administration, the Master of Business Administration and the Master of Science in Real Estate. In the Ph.D. in Business Administration courses in finance and real estate prepare students for careers in teaching, research, business, and government. Concentrations in both finance and real estate are offered in the M.B.A. program (see Interdepartmental and Intercampus Programs for degree requirements). The M.S. in Real Estate provides students in-depth training in real estate decision making.

The purpose of the Master of Science in Real Estate degree program is to provide students an opportunity to obtain a better understanding of the mechanics of real estate decision making in modern society and a greater depth of training in the discipline of real estate decision making than is possible at the baccalaureate level. The specific objectives of the program are to prepare students for careers in business, government, research, and teaching and for further graduate study. In this program, students are exposed to the theory, research, and practical applications of numerous real estate content areas, including investment analysis, appraisal, real estate development, primary and secondary mortgage markets, and mortgage backed securities. The Master of Science in Real Estate degree program is a specialized degree program designed to build upon the candidate's background.

Accreditation

The Master of Science in Real Estate is accredited by the AACSB-The International Association for Management Education.

Admission

Admission to the M.S. in Real Estate (MSRE) program is based upon the completion of the general admission requirements of the Graduate School. For MSRE program admission a score on the Graduate Management Admission Test (GMAT) and record of one's undergraduate academic performance are required. Students for whom English is not their native language must also achieve a TOEFL score of at least 550 on the paper-based test, a score of at least 213 on the computer-based test, a minimum score of 40 on the TSE, or a minimum score of 79 on the iBT. International applicants that score below minimum acceptable levels on the verbal portion of entrance examinations may be admitted under the condition that they pass an English proficiency exam or complete UT Arlington's Graduate English Skills Program prior to beginning graduate coursework. Applicants are encouraged to submit with their application a resume that highlights professional and personal accomplishments, linguistic abilities, computer expertise, and leadership experience. A standardized test score (GMAT) will not be used as the primary criterion for denying an applicant's admission to the MSRE program.

Specifically, multiple criteria are used to make admission decisions. Quantitative measures include an applicant's GMAT score and grade point average as calculated by the Graduate School. These measures are integrated into a formula, or index, that multiplies the grade point average by 200 and adds the total GMAT score. A graduate grade point average is used in the index when it is 3.0 or above and is based on at least 24 semester hours.

Along with grade point average and GMAT total score, admission criteria include the following:

1. GMAT sub scores (verbal and quantitative)
2. GMAT writing sample
3. Grades in specified undergraduate business and non-business courses (math, accounting, economics, statistics, for example)
4. Educational objectives and quality of written expression of the application essay
5. Letters of recommendation from two persons familiar with the applicant's academic background and/or work experience
6. Undergraduate major
7. General and specific program accreditation status of degree granting institution
8. Professional work experience
9. Professional certification or licensure

Due to the specialized nature of the MSRE, provisional and probationary admission decisions are infrequent options. Furthermore, please note that these are admission decision criteria and not application options (i.e., no one applies for provisional or probationary admissions).

Unconditional Admission

For unconditional admission, the applicant's composite total form the index must be 1120 or higher and items 1 through 5 above should strongly indicate potential for successful academic performance as a graduate real estate student.

Students who are unconditionally admitted, have a minimum undergraduate grade point average of 3.0 as calculated by the Graduate School (or 3.0 at the graduate level), and enroll for a minimum of six semester credit hours will be eligible for available fellowship and/or scholarship support. A standardized test score (GMAT) will not be used as the primary criterion for determining fellowship and/or scholarship eligibility.

Probationary Admission

For an applicant with an index score below 1120, probationary admission may be available when at least three items of 1 through 5 above strongly indicate potential for successful academic performance as a graduate real estate student. Items 6 through 9 will also be used to identify positive indicators for admission. Students who are admitted on probation will have one or more conditions specified, such as no grade less than 'B' for the first 12 hours of graduate study.

Provisional, Deferred and Denied Admission

A provisional decision to admit may be granted when the applicant meets criteria for unconditional or probationary status but one or more applicant credentials are incomplete. A deferred decision may be made when an applicant's file is not sufficiently complete to make a final admission decision.

For an applicant with an index score less than 1100 and at least three items of 1 through 5 indicate lack of potential for academic success as a graduate real estate student, admission will likely be denied. However, all applicant data will be carefully reviewed before an admission decision is made.

Waiver of GMAT Score for Graduate Certificate in Real Estate Development Students

Students who successfully complete the Graduate Certificate in Real Estate Development with a GPA of 3.5 or higher will, upon the recommendation of the Graduate Advisor and the Dean of Graduate Studies, be granted a waiver of the GMAT requirement for their application to the Master of Science in Real Estate program.

Degree Requirements

The program, which can be completed by part-time students who attend classes during the late afternoon, evening hours, and Saturdays, is designed to accommodate students with divergent educational backgrounds and career interests. Each student's program of work must be approved by the Real Estate Graduate Advisor and it must contain a minimum of 15 semester hours in approved advanced graduate real estate courses taken at The University of Texas at Arlington.

A minimum of 36 semester hours is required. All classes must be approved by the Graduate Advisor in Real Estate. Students who do not have a bachelor's degree in business administration may have to take additional coursework (up to 6 semester hours) to acquire a sufficient general business foundation. Students may have foundation courses waived by the Graduate Advisor if they have completed equivalent courses.

The required foundation courses include:
FINA 5311 Business Financial Management
REAE 5311 Real Estate Analysis

The required advanced courses include:
REAE 5321 Real Estate Investment
REAE 5334 Real Estate Appraisal
REAE 5319 Real Estate Finance (integrated project course)
REAE 5314 Real Estate Development
REAE 5392 Selected Topics in Real Estate
REAE 5327 Advanced Real Estate Market Analysis
REAE 5350 Quantitative Methods for Real Estate
REAE 5337 Real Estate Law

Six semester hours of advanced elective courses are required.
Examples of advanced elective courses:
FINA 5330 Real Options
FINA 5334 Financial Institutions and Markets
FINA 5323 Investments
FINA 5329 Portfolio and Security Analysis
FINA 5327 Financial Derivatives
FINA 5331 International Finance
FINA 5340 Financial Applications
FINA 5351 Financial Modeling

A minimum of 36 semester hours including six hours of thesis (REAE 5698 Thesis) is required if the student chooses to write a thesis. The thesis hours will involve working closely with one or more members of the graduate faculty from the Department of Finance and Real Estate on a research project in a specialized area of interest in real estate.

Graduate Certificate in Real Estate Development

Objective

In keeping with the mission of The University of Texas at Arlington to provide lifelong learning opportunities, the Department of Finance and Real Estate now offers a Graduate Certificate in Real Estate Development. The Graduate Certificate in Real Estate Development is designed to provide qualified real estate professionals advanced instruction in real estate development and allow them to further their professional development. This post-baccalaureate Certificate provides an educational opportunity that is narrower in scope, and shorter in duration, than graduate degree programs. It is ideal for people transitioning from one sector of real estate into real estate development, or those in the process of satisfying education requirements for various professional real estate licenses.

Admission

Admissions to the Graduate Certificate in Real Estate Development is based upon the general admission requirements of the graduate school. Generally applicants must have an undergraduate grade point average of at least 2.9 as calculated by the Graduate School. A graduate grade point average is used when the applicant has attained at least 24 graduate semester hours.

Applicants whose undergraduate GPA was less than a 2.9 may still be admitted to the Graduate Certificate in Real Estate Development program by meeting the admissions requirements for the M.S. Real Estate program.

Course Requirements

The Graduate Certificate in Real Estate Development requires students to take and to complete with a minimum GPA of 3.0, five graduate real estate courses. The structure of the program is:

Foundation Course

REAE 5311 Real Estate Analysis

Required Courses

REAE 5314 Real Estate Development
REAE 5321 Real Estate Investments
REAE 5319 Real Estate Finance
REAE 5334 Real Estate Appraisal

Use of Courses toward Degree Program

Students that initially enroll in the Graduate Certificate in Real Estate Development may later use up to 15 hours of coursework from the Certificate program toward the Master of Science in Real Estate degree.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Finance (FINA)

5182. INDEPENDENT STUDIES IN FINANCE (1-0). Extensive analysis of a finance topic. Prerequisite: consent of instructor and department chair.

5199. GRADUATE FINANCE INTERNSHIP (1-0). Practical training in finance. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

5299. GRADUATE FINANCE INTERNSHIP (2-0). Practical training in finance. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

5311. BUSINESS FINANCIAL MANAGEMENT (3-0). Study of providing the organization with funds necessary for its operation and of achieving effective utilization of funds. Primary emphasis on financial decision-making within organizations, and techniques of financial analysis and forecasting. Prerequisite: ACCT 5301 or departmental permission.

5315. HEALTH CARE FINANCIAL MANAGEMENT (3-0). Analysis of financial problems with an emphasis on the application of financial management principles and concepts to health care organizations.

5323. INVESTMENTS (3-0). Application of principles and techniques of investment management in solving investment problems of individuals and financial institutions. Considers apportionment of investment funds among alternatives, analysis of risk, valuation timing of security acquisitions. Prerequisite: FINA 5311.

5327. FINANCIAL DERIVATIVES (3-0). Nature and functions of the various futures and options markets; hedging for risk reduction, speculative trading for profit; the role of futures and options in overall portfolio strategy, along with fundamental concepts such as basis, spreading, normal and inverted markets and money management. Prerequisite: FINA 5311 and 5323.

5329. PORTFOLIO AND SECURITY ANALYSIS (3-0). The use of economic and accounting data in the selection of securities. Examination of current and traditional techniques used by investment practitioners. Prerequisite: FINA 5311 and 5323.

5330. REAL OPTIONS (3-0). Option approaches to evaluating firm capital budgeting decisions. Techniques for making investment decisions involving physical assets of nonfinancial firms. Prerequisite: FINA 5311.

5331. INTERNATIONAL FINANCE (3-0). Examines ways in which financial decision-making processes are altered by operation in a multinational environment. Includes the effects of devaluation expectations, foreign exchange and investment controls. Also, case

study materials related to actual decisions by multinational firms. Prerequisite: FINA 5311.

5334. FINANCIAL INSTITUTIONS AND MARKETS (3-0). An examination of major financial institutions and markets with emphasis on trends affecting the current operations, competitive position, and overall future of the primary financial intermediaries and the financial markets. Prerequisite: FINA 5311.

5340. FINANCIAL APPLICATIONS (3-0). Analysis of financial problems of business concerns, presented in case materials. Considers determination of capital needs, choosing among alternative capital investments, planning methods of financing new capital expenditures, and planning recapitalizations, mergers, and reorganizations. Prerequisite: FINA 5311.

5350. MATHEMATICAL FINANCE (3-0). Intensive review of the mathematics necessary for graduate work in finance, with application to selected areas of business finance, investment analysis and financial markets. Prerequisite: FINA 5311.

5351. SEMINAR IN FINANCIAL MODELING (3-0). Study of common financial modeling techniques are explored in this course. The primary focus is on portfolio optimization models and models used for pricing and analyzing derivative stock options, although most of these techniques have other applications. Students are provided with the opportunity to develop the skills needed to build financial models of their own. Prerequisite: FINA 5311.

5382. INDEPENDENT STUDIES IN FINANCE (3-0). Extensive analysis of a finance topic. Prerequisite: departmental permission.

5392. SELECTED TOPICS IN FINANCE (3-0). In depth study of selected topics in finance. May be repeated when topics vary. Prerequisite: departmental permission.

5398. THESIS (3-0). Thesis 5398 graded R (Research) or F only. Prerequisite: STAT 5325 and approval of Graduate Advisor.

5399. GRADUATE FINANCE INTERNSHIP (3-0). Practical training in finance. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

5698. THESIS (6-0). Prerequisite: STAT 5325 and approval of Graduate Advisor.

6192. RESEARCH IN FINANCE (1-0). Independent study of advanced topics in finance under the direction of graduate faculty. May be repeated for credit when topics vary. Prerequisite: FINA 5311.

6292. RESEARCH IN FINANCE (2-0). Independent study of advanced topics in finance under the direction of graduate faculty. May be repeated for credit when topics vary. Prerequisite: FINA 5311.

6301. SEMINAR IN THE THEORY OF FINANCE (3-0). Development of the fundamental theories of modern finance from their microeconomic origins. Topics include: investment under uncertainty, asset pricing models, market equilibrium, market efficiency, and expected utility theory. Prerequisite: FINA 5311.

6311. SEMINAR IN THE THEORY OF CORPORATE FINANCE (3-0). Advanced theory of corporate finance. Capital budgeting, dividend policy, and capital structure. Prerequisite: FINA 5311.

6312. SEMINAR IN THE THEORY OF INVESTMENTS (3-0). Advanced theory of investments. Modern portfolio theory and the efficiency of capital markets. Prerequisite: FINA 5311.

6313. ADVANCED RESEARCH IN FINANCE (3-0). Analytical methods commonly applied in the academic finance literature. Topics such as factor analysis in arbitrage pricing models and techniques for identification of nonstationarities in risk. Prerequisite: FINA 5311 and STAT 5301.

6314. ADVANCED RESEARCH IN FINANCE II (3-0). Specialized and evolving techniques in financial research; topics such as identification of efficient markets, linear programming in capital budgeting, and multiple discriminant analysis in bankruptcy prediction and bond rating models. Prerequisite: FINA 5311 and STAT 5301.

6390. SEMINAR IN SPECIAL TOPICS IN FINANCE (3-0). Doctoral level coverage of advanced topics in finance. May be repeated for credit when topics vary. Prerequisite: FINA 5311.

6392. RESEARCH IN FINANCE (3-0). Independent study of advanced topics in finance under the direction of graduate faculty. May be repeated for credit when topics vary. Prerequisite: FINA 5311.

Real Estate (REAE)

5182. INDEPENDENT STUDIES IN REAL ESTATE (1-0). Extensive analysis of a real estate topic. Prerequisite: departmental permission.

5199. GRAD REAL ESTATE INTERNSHIP (1-0). Practical training in real estate. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester house completed.

5299. GRAD REAL ESTATE INTERNSHIP (2-0). Practical training in real estate. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester house completed.

5311. REAL ESTATE ANALYSIS (3-0). Survey of real estate investment, appraisal and valuation, finance, market analysis, and other phases of the real estate development/management process.

5314. SEMINAR IN REAL ESTATE DEVELOPMENT (3-0). Topics relating to site selection, design, market analysis, financial feasibility, and management in the real estate development process. Prerequisite: FINA 5311 or REAE 5311.

5319. SEMINAR IN REAL ESTATE FINANCE (3-0). Study of real property financing methods; analysis of cost of borrowing, sources of funds, and mortgage terms; emphasis on construction and permanent financing of commercial and industrial properties. Prerequisite: FINA 5311 or REAE 5311.

5321. SEMINAR IN REAL ESTATE INVESTMENT (3-0). Introduction to analytical techniques, sources of financing, and other factors related to real estate investment. Stresses current developments and topics. Prerequisite: FINA 5311 or REAE 5311.

5327. ADVANCED REAL ESTATE MARKET ANALYSIS (3-0). Study of advanced market analysis techniques and methods, including trend analysis and demand forecasting. Emphasis is on the application of these methods to commercial property markets.

5334. SEMINAR IN REAL ESTATE APPRAISAL (3-0). Market, cost, and income approaches with stress on income forecasting and capitalization. Prerequisite: FINA 5311 or REAE 5311.

5337. REAL PROPERTY LAW (3-0). Legal property theory underlying real estate transactions and relationships including estates and interests in land, conveyances, and mortgages.

5350. QUANTITATIVE METHODS FOR REAL ESTATE (3-0). Study of advanced statistical, modeling, and econometric techniques as applied to real estate markets. Emphasis on the integration of these techniques with traditional real estate analysis.

5382. INDEPENDENT STUDIES IN REAL ESTATE (3-0). Extensive analysis of a real estate topic. Prerequisite: departmental permission.
5392. SELECTED TOPICS IN REAL ESTATE (3-0). In-depth study of selected topics in real estate. May be repeated when topics vary. Prerequisite: REAE 5311.
5398. THESIS (3-0). Prerequisite: departmental permission.
5399. GRAD REAL ESTATE INTERNSHIP (3-0). Practical training in real estate. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester house completed.
5698. THESIS (6-0). Prerequisite: departmental permission.
6390. SEMINAR IN SPECIAL TOPICS IN REAL ESTATE (3-0). Doctoral level coverage of advanced topics in real estate. May be repeated for credit when topics vary. Prerequisite: REAE 5311.
6392. RESEARCH IN REAL ESTATE (3-0). Independent study of advanced topics in real estate under the direction of graduate faculty. May be repeated for credit when topics vary. Prerequisite: REAE 5311.

Business Law (BLAW)

5330. LEGAL ENVIRONMENT OF BUSINESS (3-0). Study, in a conceptual framework, of the ideas and social and political forces that have led to changes in the business legal environment and legal institutions including current and historical developments affecting the business corporation. Legal framework and ethical problems of managers in serving diverse interests studied in connection with modern social legislation affecting business.
5331. LAW OF INTERNATIONAL BUSINESS (3-0). General principles of law applicable to international business including case law, statutory law, treaties, administrative law, and international agreements.

Program in Health Care Administration

www.uta.edu/gradbiz/HealthAdmin

Areas of Study and Degrees
Health Care Administration
M.S.

Master's Degree Plans
Non-Thesis

Graduate Advisor
Demetria Wilhite
107Y Business
817.272.1287
hcad@uta.edu

Graduate Studies
107Q Business
817.272.3005

Graduate Faculty
Graduate faculty from the College of Business Administration, and the School of Nursing, are involved in teaching and supervising graduate student research. See below for faculty contacts in these areas.

Economics
Meiners

Finance
Swanson

Information Systems and Management Sciences
Frazier

Management
McMahan, Quick

Marketing
Munch

Nursing
Grove

Objectives

The program in Health Care Administration is designed to provide graduate students an integrated, contemporary, and multidisciplinary education. Diverse topics are integrated into the curriculum, research and residences to provide:

1. An understanding of the modern health industry
2. Knowledge, skills and abilities to assume administrative roles in various organizations in the health industry
3. Opportunities to develop leadership skills
4. Interactions with diverse specialists in the health industry to evaluate and resolve administrative problems

Admission

Admission to the M.S. in Health Care Administration (HCAD) program is based upon the completion of the general admission requirements of the Graduate School. For HCAD program admission a score on the Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE) and record of one's undergraduate academic performance are required. Students for whom English is not their native language must achieve a TOEFL score of at least 575 (paper-based) or 230 (computer-based). International applicants that score below minimum acceptable levels on the verbal portion of entrance examinations may be admitted under the condition that they pass an English proficiency exam or complete UT Arlington's Graduate English Skills Program prior to beginning graduate coursework. Applicants are encouraged to submit with their application a resume that highlights professional and personal accomplishments, linguistic abilities, computer expertise and leadership experience. A standardized test score (GMAT or GRE) will not be used as the sole criterion for denying an applicant's admission to the HCAD program.

Multiple criteria are used to make admission decisions. Quantitative measures include an applicant's GMAT or GRE scores and grade point average as calculated by the Graduate School. These measures are integrated into a formula, or index, that multiplies the grade point average by 200 and adds the total GMAT score. Index factors are weighed equally at the outset of applicant evaluation. A graduate grade point average is used in the index when it is 3.0 or above and is based on at least 24 semester hours. For unconditional admission, the applicant's composite total from the index must be 1050 or higher and items 1 through 5 above should strongly indicate potential for successful academic performance as a graduate health care administration student.

Along with grade point average and GMAT or GRE scores, admission criteria include the following:

1. GMAT or GRE sub scores (verbal and quantitative)
2. GMAT or GRE writing sample
3. Grades in specified undergraduate business and non-business courses (math, accounting, economics, statistics, for example)
4. Educational objectives and quality of written expression of the application essay
5. Letters of recommendation from three persons familiar with the applicant's academic background and/or work experience
6. Undergraduate Major
7. General and specific program accreditation status of degree granting institution
8. Professional work experience
9. Professional certification or licensure
10. A personal interview, at the discretion of the program advisor

Unconditional Admission

The GMAT or GRE test may be waived for applicants with an earned graduate degree in an appropriate health care related discipline or profession.

The GMAT or GRE test may also be waived for applicants with five or more years of increasing responsibility in managerial, professional, and/or technical positions in the health care industry, and with a 3.0 grade point average on undergraduate work as calculated by the Graduate School; detailed work history required with application.

The GMAT or GRE test may also be waived for applicants who have (within the last 3 years) or will receive an undergraduate degree from UT Arlington with a GPA of 3.2 or higher, as calculated by the graduate school.

Students who are unconditionally admitted, have a minimum undergraduate grade point average of 3.0 as calculated by the Graduate School (or 3.0 at the graduate level), and enroll for a minimum of six semester credit hours will be eligible for available fellowship and/or scholarship support. A standardized test score (GMAT or GRE) will not be used as the sole criterion for determining fellowship and/or scholarship eligibility.

Probationary Admission

For an applicant with an index score below 1050, probationary admission may be available when at least three items of 1 through 5 above strongly indicate potential for successful academic performance as a graduate health care administration student. Items 6 through 10 will also be used to identify positive indicators for admission. Students who are admitted on probation will have one or more conditions specified, such as no grade less than 'B' for the first 12 hours of graduate study.

Provisional, Deferred and Denied Admission

A provisional decision to admit may be granted when the applicant meets criteria for unconditional or probationary status but one or more applicant credentials are incomplete. A deferred decision may be made when an applicant's file is not sufficiently complete to make an admit or deny decision.

For an applicant with an index score less than 1000 and other evidence that indicates lack of potential for academic success as a graduate health care administration student, admission will likely be denied. However, all applicant data will be carefully reviewed before an admission denial is made.

Degree Requirements

The M.S. Degree in health Care Administration requires 36 hours of specified coursework. The twelve courses are normally taken in the following sequence.

HCAD 5301 Health Care Administration I
MANA 5340 Strategic Human Resource Management
HCAD 5310 Health Care Law
ECON 5313 Managerial Economics
ACCT 5301 Accounting Analysis I
FINA 5315 Health Care Financial Management
MARK 5330 Service Marketing Management
HCAD 5310 Health Care Law
ECON 5333 Economics of Health
INSY 5350 Health Care Information Systems
STAT 5325 Advanced Statistical Methods
HCAD 5390 Seminar in Health Care Administration
HCAD 5399 Residence/Internship

Together these courses provide the student with a general background in business and economics and industry relevant knowledge in all of the fundamental areas of managing health care organizations. The residence or internship course requirement can be satisfied in either of two methods. The residence options are as follows:

Working Residence/Internship. The completion of a residence/Internship is a primary component of the program for students who do not have prior appropriate professional work experience in a health-related organization. The residence provides students the opportunity to acquire firsthand professional knowledge of and experience with the functioning of a health-related organization. The working residence requires the completion of 240 hours of approved work experience in a professional capacity and a final written report, related to the student's residence, supervised by a member of the faculty of the degree program. The Graduate Advisor will provide overall supervision and coordination of the residence.

Residence/Internship Substitute. A student who has substantial and acceptable work experience in a supervisory or professional position may qualify for the residence substitute. Work experience is approved by the Graduate Advisor. Accordingly, a student may request:

Option I. Design, conduct and complete a supervised research project, an effort equivalent in scope to three (3) hours of graduate research-oriented courses, that is highly relevant to the student's intended future professional focus in lieu of a working residence; the project will be supervised by at least one member of the faculty of the degree program, or

Option II. Complete an approved graduate course with significant research content highly relevant for the student's intended future professional field of specialty.

Graduate Certificate Program

Admission

The certificate program is available to any student who has been admitted into the Graduate School at UT Arlington. The student should contact the Graduate Advisor to declare the intent to earn the certificate before enrolling in courses to satisfy certificate requirements.

Program of Study

The certificate requires the completion of at least 12 hours of courses selected from HCAD 5301, HCAD 5310, HCAD 5390, ECON 5333, ACCT 5301, FINA 5315, INSY 5350, or MARK 5330 as approved by the Graduate Advisor. A grade of A or B must be received for all courses that can be applied to meet certificate requirements.

Transfer to the M.S. Program

A student in the Certificate Program must apply for admission and meet all admission requirements to enter the M.S. program.

Integrated Degree Plans

Bachelor of Science in Biology and Master of Science in Health Care Administration

A five-year curriculum designed to prepare students for careers in health care administration. The curriculum also prepares students for

medical school and advanced study. Students are required to take courses from life sciences, business and liberal arts, culminating in a five-year Master of Science Degree in Health Care Administration (HCAD), including a Bachelor of Science Degree in Biology. The curriculum is offered jointly by the College of Business Administration and the College of Science. The BS in Biology will be conferred at the same time that the student is awarded the MS in Health Care Administration. If a student engaged in this joint degree program is not accepted into the HCAD graduate program, or enters the HCAD program and fails to complete the requirement for the master's degree in HCAD, then in order to earn a BS in Biology, the student must take the same, full complement of courses required to earn the BS as taken by students not enrolled in the BIOL/HCAD joint program.

Students interested in this integrated undergraduate and graduate degree plan should consult with the Biology undergraduate advisor and the Health Care Administration graduate advisor.

Bachelor of Arts in Psychology and Master of Science in Health Care Administration

The five-year curriculum prepares students for careers in health care administration. Students are required to take courses from behavioral and life sciences, business, and liberal arts, culminating in a five-year Master of Science Degree in Health Care Administration (HCAD), including a Bachelor of Arts degree in Psychology. The BA degree in Psychology will be awarded at the same time that the student receives the MS in Health Care Administration. If a student engaged in this joint degree program is not accepted into the HCAD graduate program, or enters the HCAD program and fails to complete the requirements for the masters degree in HCAD, a BA degree in Psychology will not be awarded until the student has completed all courses required of students for a BA degree who are not enrolled in this dual degree program. Courses taken in Business may be used to satisfy the requirements of a minor area of study.

Students interested in this integrated undergraduate and graduate degree plan should consult with the Psychology undergraduate advisor and the Health Care Administration graduate advisor.

Dual Degree Program

Master of Science in Health Care Administration and Master of Science in Nursing

The College of Business Administration and the School of Nursing offer a dual degree consisting of the M.S. in Health Care Administration and the Master of Science in Nursing. Both degrees focus on administration and health care content and can be completed with a minimum of 56 hours total. Students can expand their knowledge and skills of nursing while also preparing themselves for administrative positions in a variety of health care organizations. Persons interested in pursuing both degrees simultaneously should review the dual degree arrangements presented in the introductory sections of the catalog and consult with both the advisor of the M.S. in Nursing and the advisor of the M.S. in Health Care Administration.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Health Care Administration (HCAD)

5192. SPECIAL TOPICS IN HEALTH CARE ADMINISTRATION (1-0). In-depth study of selected topics in health care administration.

5199. GRADUATE HEALTH CARE ADMINISTRATION INTERNSHIP (1-0). Practical training in health care administration. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

5292. SPECIAL TOPICS IN HEALTH CARE ADMINISTRATION (2-0). In-depth study of selected topics in health care administration.

5299. GRADUATE HEALTH CARE ADMINISTRATION INTERNSHIP (2-0). Practical training in health care administration. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

5301. HEALTH CARE ADMINISTRATION I (3-0). Introduction to health care; legislation; reimbursement systems; characteristic administrative and clinical roles responsibilities and education; public health care structures; regulatory agencies; health industry trends; and advances in research and technologies.

5302. HEALTH CARE ADMINISTRATION II (3-0). Managed care; types of health care delivery systems; national health care policy; teamwork in primary care; management of cost and quality of care; legal issues; ethical issues, including bioethics and business ethics; changing roles of health care professionals; varieties of domestic, public and international health care delivery systems.

5310. HEALTH CARE LAW (3-0). Coverage of statutory and case law of the health care industry. Topics include patient rights and malpractice, employment and compensation matters, insurance and claims, and government agencies that regulate aspects of health services delivery.

5390. SEMINAR IN HEALTH CARE ADMINISTRATION (3-0). Integration of the curriculum into a cohesive whole. Use of policy cases in health care to develop decision and leadership skills.

5392. SPECIAL TOPICS IN HEALTH CARE ADMINISTRATION (3-0). In-depth study of selected topics in health care administration.

5398. RESEARCH IN HEALTH CARE ADMINISTRATION (3-0). Independent research under the supervision of a faculty member.

5399. GRADUATE HEALTH CARE ADMINISTRATION INTERNSHIP (3-0). Practical training in health care administration. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

Objective: M.B.A. Program

Information Systems emphasizes the preparation required for developing and managing computer-based information systems. The comprehensive curriculum includes the study of applicable computer hardware, software, and database technology; the design of information systems; and management and control of information technologies and applications.

Operations Management (OPMA) focuses on the activities involved in the transformation of inputs into outputs for both manufacturing and service organizations. The OPMA courses contain a variety of topics such as scheduling, inventory management, operations strategy, quality, logistics, project management and supply chain management.

Objective: Master of Science in Information Systems

The objective of the Master of Science degree in Information Systems is to provide qualified students with both a general knowledge of business and a specialized knowledge of information systems. Students are exposed to the theory, research, and practical applications of numerous information systems areas including management information systems, database management systems, systems analysis and design, and data communications; and may take electives in distributed systems, information resource management, general systems concepts, electronic commerce, ERP, decision support systems, problem formulation, computer science, management sciences, research, and other related fields. The program is designed to prepare students for information systems careers in government and nonprofit organizations as well as in business and industry.

Objective: Ph.D. in Business Administration Program

The objective of the Ph.D. degree in Business Administration (with majors in information systems, operations management, or business statistics) is primarily to develop scholars with an ability to teach and conduct independent research. This is accomplished through a combination of rigorous coursework and research activities. This course provides fundamental knowledge in the various areas of information systems, and offers insights into research topics of interest to IS researchers. The research interests of our INSY faculty members encompass technical, managerial, and organizational issues dealing with the development and deployment of information systems.

For a concentration in Operations Management (OPMA), coursework addresses various areas of the field, such as supply chain management, service operations, quality management, and inventory management. The goal of the OPMA Ph.D. program is to provide students with a balanced set of research methods and concepts to better understand and analyze operational problems and issues. Research approaches include empirical methods, conceptual techniques, and modeling.

For a concentration in Business Statistics (STAT), coursework can be taken in a wide variety of statistical areas focusing on different statistical approaches and techniques. Some STAT coursework can be taken from different departments across the university, as appropriate for the student's interests. The goal of the STAT Ph.D. program is to provide students with fundamental knowledge of common statistical approaches and techniques used in business analysis and research for improved decision-making.

Department of Information Systems and Operations Management

www.uta.edu/infosys

Areas of Study and Degrees

Business Administration
M.B.A., Ph.D.
(See Program in Business Administration)

Information Systems
M.S.

Mathematical Sciences
Ph.D.
(See Interdepartmental and Intercampus Programs)

Master's Degree Plans

Thesis or Thesis Substitute

Chair

R.C. Baker
535 Business
817.272.3502

M.S.I.S. Graduate Advisor

Carolyn Davis
508 Business
817.272.7399

INSY Ph.D. Graduate Advisor

Radha Mahapatra
521 Business
817.272.3590

OPMA/STAT Ph.D. Graduate Advisor

Greg Frazier
530 Business
817.272.3559

Graduate Faculty

Professors
Baker, Raja, Teng, Whiteside

Associate Professors
Eakin, Frazier, Mahapatra, Sikora, Slinkman

Assistant Professors
Cannon, Henderson, Nerur, Prater, Song, Swafford

Admission: M.S.I.S. Program

Admission to the M.S. in Information Systems (MSIS) program is based upon the completion of the general admission requirements of the Graduate School. For MSIS program admission an acceptable score on the Graduate Management Admission Test (GMAT) and a satisfactory record of undergraduate academic performance are required. Applicants are encouraged to submit with their application a resume that highlights professional and personal accomplishments, linguistic abilities, computer expertise and leadership experience. Applicants with two to five years of experience are preferred. A single standardized test score will not be used as the sole criterion for denying an applicant's admission to the MSIS program. Similarly, scores in English and quantitative skills that fall below acceptable levels on a single standardized test will be viewed in conjunction with other demonstrated skills in these areas.

Students for whom English is not their native language must achieve a Test of English as a Foreign Language (TOEFL) score of at least 550 (paper-based) or 213 (computer-based). International applicants that score below minimum acceptable levels on the verbal portion of entrance examinations may be admitted on probation with acceptable demonstration of English proficiency.

Multiple criteria (both quantitative and qualitative) are used to make admission decisions. Quantitative measures include an applicant's GMAT score, GMAT Verbal percentile, GMAT Quantitative percentile, and grade point average as calculated by the Graduate School. These measures are integrated into a formula, or index, that multiplies the grade point average by 200 and adds the total GMAT score. Index factors are weighed equally at the outset of applicant evaluation. When applicable, a graduate grade point average is considered when it is based on at least 24 semester hours of graduate work.

Along with the grade point average and GMAT total score, admission criteria include the following:

1. GMAT sub-scores (verbal and quantitative)
2. GMAT writing sample
3. Grades in specified undergraduate business and business-related courses (math, accounting, economics, statistics, for example)
4. Graduate academic performance, if applicable
5. Educational objectives and quality of written expression of the application essay
6. Letters of recommendation from three persons familiar with the applicant's academic background and/or work experience
7. Undergraduate major and relevance to graduate study in IS
8. General and specific program accreditation status of degree granting institution
9. Professional work experience
10. Professional certification or licensure

Unconditional Admission

For unconditional admission, the applicant's composite total from the index must be 1080 or higher, and items 1 through 6 above should strongly indicate potential for successful academic performance as a graduate information systems student. If an applicant falls below the GMAT Verbal percentile of 30 and/or the GMAT Quantitative percentile of 30, corroborating evidence of proficiency in that skill will be reviewed.

Students who are unconditionally admitted must have a minimum undergraduate grade point average of 3.00 as calculated by the Graduate School (or 3.00 at the graduate level), and enroll for a minimum of six semester credit hours to be eligible for available fellowship and/or scholarship support. A standardized test score will not be used as the sole criterion for determining fellowship and/or scholarship eligibility.

Probationary Admission

For an applicant with an index score below 1080, probationary admission may be available when at least three items of 1 through 6 above strongly indicate potential for successful academic performance as a graduate information systems student. Items 7 through 10 will also be used to identify positive indicators for admission. When verbal or quantitative percentiles are below the 30th percentile, probationary admission may be available. Students admitted on probationary status for low verbal or quantitative percentiles, must satisfactorily complete one or more English and/or math courses in the first two semesters as specified by the Graduate Advisor. Students who are admitted on probation must meet the conditions specified, such as no grade less than 'B' for the first 12 hours of graduate study and any required undergraduate course.

Provisional, Deferred and Denied Admission

A provisional decision to admit may be granted when the applicant meets criteria for unconditional or probationary status but one or more applicant credentials are incomplete. A deferred decision may be made when an applicant's file is not sufficiently complete to make an admit or deny decision.

For an applicant who does not meet minimum acceptable scores on the GMAT, and other evidence indicates lack of potential for academic success as a graduate information systems student, admission will be denied. However, all applicant data will be carefully reviewed before an admission denial is made.

Degree Requirements

For students who have earned a Bachelor of Business Administration (BBA) degree (or equivalent), the program consists of a minimum of 30 semester hours, including six hours of thesis work. Nine semester hours of advanced electives approved by the Graduate Advisor can be substituted for the thesis, in which case the advanced program will be 33 semester hours. Students who do not have a BBA may have to take additional coursework (up to 18 semester hours) to acquire sufficient general business knowledge for effective performance as an information systems professional. Foundation courses which are listed in Section 1 below, may be waived if equivalent coursework has been completed.

Students with no background in computers or business math may have to take deficiency courses prior to the foundation courses. Students who are deficient in written and/or oral communication may be required to take appropriate English and speech courses.

The minimum advanced program of 30 semester hours contains six hours of required work in research and statistical methods; 12 hours of required work in object-oriented business programming, database management systems, systems analysis and design, and distributed information systems and data communications; six hours of electives (to be selected from an approved list of elective courses, or to be approved upon selection by the Graduate Advisor); and six hours of thesis demonstrating acceptable performance on a major systems project or an approved nine-semester-hour thesis substitute.

The required curriculum is as follows:

1. Foundation Courses (18 semester hours)
   ACCT 5301 Accounting Analysis I
   ECON 5311 Economic Analysis
   MARK 5311 Marketing
   FINA 5311 Finance
   MANA 5312 Management
   OPMA 5361 Operations Management
2. Advanced Courses (Thesis Substitute Option - 33 hours; Thesis Option - 30 hours)
   a. Required Research courses (6 semester hours)
      STAT 5325 Advanced Statistical Methods in Business
      Approved Research Elective
   b. Required Information Systems courses
      Thesis Substitute Option (15 semester hours)*
      INSY 5309 Object Oriented Business Programming
      INSY 5335 Applied Database Management
      INSY 5341 Systems Analysis and Design
      INSY 5343 Computer Networks and Distributed Systems
      INSY 5375 Management of Information Systems
   c. Thesis Option (12 semester hours)*
      INSY 5309 Object Oriented Business Programming
      INSY 5335 Applied Database Management
      INSY 5341 Systems Analysis and Design
      INSY 5343 Computer Networks and Distributed Systems
   d. Approved Electives
      Thesis Substitute Option (12 semester hours)
      Approved electives (12 semester hours)
      Thesis Option (12 semester hours)
      Thesis (INSY 5698) (6 semester hours)
      Approved electives (6 semester hours)

      To the extent possible, electives should be chosen from one of the suggested information systems concentration: security or software architecture.**

      Upon Graduate Advisor approval, outside elective courses may be selected from areas such as accounting, computer science, finance, industrial engineering, management, management sciences, marketing, mathematical sciences, psychology, and operations management (6 semester hours).

*Courses may be substituted if equivalent courses have been taken.
**An approved 3-credit hour graduate internship (INSY 5399) may also be taken as an elective.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Information Systems (INSY)

5182. INDEPENDENT STUDIES IN INFORMATION SYSTEMS (1-0). Extensive analysis of an information systems topic. Graded F, P, R. Prerequisite: permission of instructor.

5199. GRADUATE INFORMATION SYSTEMS INTERNSHIP (1-0). Practical training in information systems. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities.

5299. GRADUATE INFORMATION SYSTEMS INTERNSHIP (2-0). Practical training in information systems. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities.

5309. OBJECT-ORIENTED BUSINESS PROGRAMMING (3-0). Topics include fundamental programming structures, objects and classes, inheritance, and other basic concepts related to OO programming.

5333. INFORMATION TECHNOLOGIES FOR STRATEGIC MANAGEMENT (3-0). A nontechnical, managerially-oriented introduction to information technology applications that enhance an organization's competitive effectiveness. Topics include: Executive Information Systems (EIS), Enterprise Resource Planning (ERP), Supply Chain Management (SCM) systems, data warehousing and mining, business intelligence, knowledge management, e-business, and approaches to integrate these technologies with corporate strategic planning and management. Graded A, B, C, D, F, W.

5335. APPLIED DATABASE MANAGEMENT (3-0). Concepts, tools, and technologies associated with the design, implementation and management of large databases are presented. Topics include data models (with emphasis on E/R model and relational model), database design and implementation, database query language, transaction management, and distributed databases. Recent advances in data management are also discussed. Use of a commercial DBMS is required. Prerequisite: INSY 5309.

5337. ADVANCED DATA MANAGEMENT (3-0). This course covers concepts, tools, and technologies associated with the design and implementation of data warehouses. It also covers tools and techniques used in mining business data. These objectives are met through a combination of lectures, group projects and homework assignments. Prerequisite: INSY 5335.

5339. PRINCIPLES OF BUSINESS DATA MINING (3-0). This course provides an overview of the life cycle stages of a data mining project, contexts in which data mining is applied, a survey of data mining techniques, and measuring the effect of the resulting action. Additional topics include communicating with management representatives and IT professionals, ethical issues in data mining, and relationships with reference disciplines such as statistics, artificial intelligence, machine learning and database. Learning is facilitated by a combination of lectures, group projects, and homework assignments. This course is cross-listed with STAT 5339. Prerequisite: STAT 5325. May be taken concurrently.

5340. MANAGING THE INTERNET-ENABLED ORGANIZATION (3-0). This course examines a wide variety of topics important to understanding and managing the Internet-enabled organization. Topics may include: Internet infrastructure and related technologies; e-business models; security; ethical, legal, global, and social concerns; and managerial and marketing issues.

5341. ANALYSIS AND DESIGN (3-0). Analysis and design phase of systems development life cycle. Topics include systems survey, functional specification, interface specification, data design, program design, system testing, and implementation. Prerequisite: INSY 5335.

5342. ADVANCED SYSTEMS DESIGN (3-0). This course provides an understanding of state-of-the-art software development methodologies, including those that are fast emerging. The focus will be on how these new methods differ from traditional practices and what research opportunities they afford to IS researchers. There will be a strong emphasis on technical as well as on socio-technical aspects of software development in the context of these new methodologies. Prerequisite: INSY 5341.

5343. DATA COMMUNICATIONS AND NETWORKING (3-0). Technological and managerial issues related to design, operation and maintenance of computer networks. Topics include communication architectures and protocols, LANs and WANs, ATM and frame relay, cellular and satellite communication, the World Wide Web, the Internet, and electronic commerce.

5347. PRINCIPLES OF INFORMATION SECURITY (3-0). Starting with an introduction to Information Security concepts, this course will address security terminology, history, management, technology and practice based on the Security Domains specified by ISC2. The course will address strategies and tools, managerial, technological, legal, ethical and operational issues related to Information Security. Topics in developing Security Blueprint, Incidence Response, Business Continuity planning and Disaster Recovery will be addressed. Prerequisite: INSY 5343.

5350. HEALTH CARE INFORMATION SYSTEMS (3-0). Addresses issues in the development, integration, and management of health care information systems. Specifically, topics in financial information systems, patient care systems, and health care delivery applications will be discussed. Both case studies and real life applications will be studied. Prerequisite: Cohort HCAD Major.

5352. TOPICS IN OBJECT TECHNOLOGY (3-0). Coverage of current topics in Object Technology to include the study of object-oriented agents, components, object request Brokers, distributed objects and related implementations of object-oriented software. Also includes the study of design patterns in object-oriented software design. Prerequisite: INSY 5309.

5354. ENTERPRISE APPLICATION DEVELOPMENT (3-0). This course will address the architectures, methodologies, tools and techniques used in the development and deployment of enterprise-level information systems applications. The topics covered will include client/server applications, intranet/internet applications, distributed applications, enterprise-level objects and server-side components. Prerequisite: INSY 5341 and 5352.

5357. ENTERPRISE RESOURCE PLANNING (3-0). An introduction to enterprise resource planning (ERP), a business management paradigm that integrates all facets of the business, including planning, manufacturing, sales, finance and marketing. Course will cover both the methodology and practice of ERP using commercial software packages. Prerequisite: INSY 5330.

5363. INTELLIGENT INFORMATION SYSTEMS (3-0). Topics include expert systems, inductive learning, genetic algorithms, neural networks, simulated annealing, etc. Prerequisite: INSY 5309.

5365. COMPUTER FORENSICS AND INVESTIGATIONS (3-0). This course provides an introduction to acquiring and analyzing digital evidence for forensic purposes. The course will cover tools and techniques of forensics investigation of computer crimes. Topics covered include analysis file structures, data recovery, email and network analysis, digital investigations, expert witness testimony, and preserving evidence for law enforcement and legal proceedings. Prerequisite: INSY 5347.

5370. ENTERPRISE APPLICATION DEVELOPMENT (3-0). Designing, developing and deploying enterprise class software requires different level of knowledge, expertise and skill. This course address the techniques, methods and technologies needed to develop and deploy enterprise-level software applications. These topics are addressed from the perspectives of architecture, components, patterns and frameworks. Prerequisite: INSY 5309.

5373. INFORMATION SYSTEMS PROJECT MANAGEMENT (3-0). This course introduces students to the concepts and practices of project management and their importance to improving the success of information technology projects. Distinct aspects or characteristics of IT projects which cause these projects to behave differently in the corporate world than do other, non-technical, projects will be discussed. Prerequisite: INSY 5341.

5375. MANAGEMENT OF INFORMATION SYSTEMS (3-0). Addresses the management of the information resource from a senior management viewpoint. Covers the use of information technology to achieve competitive advantage, information technology and the organization, managing information assets, managing outsourcing, information technology operations and management processes, and information technology as a business.

5379. ORGANIZATIONAL RESEARCH PROJECT (1-0). Students conduct a research project at a local organization, focusing on applications of information systems concepts studied in their coursework. Prerequisite: Cohort MBA Major.

5382. INDEPENDENT STUDIES IN INFORMATION SYSTEMS (3-0). Extensive analysis of an information systems topic. Graded F, P, R.

5392. SELECTED TOPICS IN INFORMATION SYSTEMS (3-0). In-depth study of selected topics in information systems. May be repeated when topics vary.

5398. THESIS (3-0). Graded F, R.

5399. GRADUATE INFORMATION SYSTEMS INTERNSHIP (3-0). Practical training in information systems. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities.

5698. THESIS (6-0). Graded F, R, P.

6182. INDEPENDENT STUDY IN INFORMATION SYSTEMS (3-0). Doctoral level study of information systems topics. Prerequisite: Doctoral standing.

6301. SEMINAR IN RESEARCH FOUNDATIONS (3-0). Integrative analysis of research in information systems, including research philosophies and methodologies, contemporary research topics, dissertation research and future directions for information systems research. Prerequisite: Doctoral standing.

6306. SEMINAR IN INFORMATION TECHNOLOGIES (3-0). Focuses on contemporary technology issues in IS development and deployment. Prerequisite: Doctoral standing and INSY 6301.

6307. SEMINAR IN IS MANAGEMENT (3-0). Focuses on managerial and organizational issues in IS. Prerequisite: Doctoral standing and INSY 6301.

6392. SELECTED TOPICS IN INFORMATION SYSTEMS (3-0). Advanced doctoral level topics in Information Systems. May be repeated when topics vary. Prerequisite: Doctoral standing.

Management Sciences (MASI)

5182. INDEPENDENT STUDIES IN MANAGEMENT SCIENCES (1-0). Extensive analysis of a management sciences topic. Graded F, R, P.

5199. GRADUATE MANAGEMENT SCIENCES INTERNSHIP (1-0). Practical training in management science. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities.

5282. INDEPENDENT STUDIES IN MANAGEMENT SCIENCES (2-0). Extensive analysis of a management sciences topic. Graded F, R, P.

5299. GRADUATE MANAGEMENT SCIENCES INTERNSHIP (2-0). Practical training in management science. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities.

5330. NONPARAMETRIC STATISTICS (3-0). A survey of statistical techniques which may be used when the normal assumptions of parametric statistics cannot be made; inclusion of procedures for cross-classified data, methods involving ranks, and Kolmogorov-Smirnov type techniques. Prerequisite: STAT 5325.

5331. STATISTICAL GRAPHICS AND GRAPHICAL PERCEPTION (3-0). Graphical depiction and analysis of data structure, graphical software, and graphical perception. Statistical topics would include exploratory analysis of univariate and multivariate data using graphical software, e.g., Lowess Smoothing and Sunflower Plots. Graphical perception topics include mental imaging theory, Weber's and Steven's Laws, decision support, and review and critiques of current literature. Prerequisite: STAT 5325.

5332. ADVANCED DATA COLLECTION (3-0). Surveys, audits, samples and experimental designs contrasted and compared as a basis for statistical inference. Emphasis is on the integration of techniques common to differing areas of business research. Prerequisite: STAT 5325.

5382. INDEPENDENT STUDIES IN MANAGEMENT SCIENCES (3-0). Extensive analysis of a management sciences topic. Graded F, R, P.

5399. GRADUATE MANAGEMENT SCIENCES INTERNSHIP (3-0). Practical training in management science. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities.

6309. MULTIVARIATE STATISTICAL METHODS (3-0). Focuses on methods of analyzing mean and covariance structures. Topics include commonly applied multivariate methods such as multiple analysis of variance, repeated measures, discriminant analysis, profile analysis, canonical correlations, and factor analytic methods. The use of matrix algebra and available computer packages will be stressed. Prerequisite: Doctoral standing and STAT 5325.

Operations Management (OPMA)

5199. GRADUATE OPERATIONS MANAGEMENT INTERNSHIP (1-0). Practical training in operations management. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities.

5299. GRADUATE OPERATIONS MANAGEMENT INTERNSHIP (2-0). Practical training in operations management. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities.

5321. INTRODUCTION TO MANAGEMENT SCIENCES (3-0). Introduction to optimization and quantitative analysis of business problems. Topics include applications of linear and integer programming, network analysis, simulation, game theory, queuing theory, and other operations research tools.

5361. OPERATIONS MANAGEMENT (3-0). Introduction to concepts and problem-solving techniques important in production management and operations management. Topics include demand forecasting, capacity management, resource allocation, inventory management, supply chain management, quality control, and project management.

5363. OPERATIONS PLANNING AND CONTROL (3-0). Course covers operations planning and control systems in manufacturing and service organizations. Topics include inventory control, material requirements planning, Just-In-Time and lean manufacturing, production scheduling, capacity planning, and operations planning and control software. Prerequisite: OPMA 5361.

5364. PROJECT MANAGEMENT (3-0). Course covers concepts and issues important in effectively managing projects. Topics include project selection, project planning, negotiation, budgeting, scheduling, resource allocation, project control, project auditing, and project termination.

5367. QUALITY MANAGEMENT (3-0). Course focuses on quality of products and services needed by society. Topics include consideration of quality cost and improvements, designing for quality, process controls, inspections, testing, acceptance sampling, management controls, and quality information systems. Prerequisite: STAT 5301.

5368. GLOBAL SUPPLY CHAIN MANAGEMENT (3-0). Course covers concepts and issues important in managing supply chains. A strategic view is taken of the way companies coordinate their operations with suppliers and customers in a global marketplace. The strategic use of information systems to better manage supply chains is also covered. Prerequisite: OPMA 5361.

5369. LOGISTICS MANAGEMENT (3-0). Course covers physical supply, in-plant movement and storage, and physical distribution of materials, which comprise logistics systems in industry. Topics include facility location, transportation, warehousing, inventory control, distribution networks, and logistics information systems. Prerequisite: OPMA 5361.

5379. ORGANIZATIONAL RESEARCH PROJECT (3-0). Students conduct a research project at a local organization, focusing on applications of business concepts studied in their coursework. Prerequisite: Cohort MBA Major.

5389. INDEPENDENT STUDIES IN MILITARY ACQUISITION (3-0). This course is reserved for military officers in the Training with Industry or I-GRAD programs at UT Arlington. Studies consist of an acquisition practicum with training at an assigned agency and a required seminar at UT Arlington.

5392. SELECTED TOPICS IN OPERATIONS MANAGEMENT (3-0). In-depth study of selected topics in operations management. May be repeated when topics vary.

5399. GRADUATE OPERATIONS MANAGEMENT INTERNSHIP (3-0). Practical training in operations management. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities.

5689. INDEPENDENT STUDIES IN MILITARY ACQUISITION (6-0). This course is reserved for military officers in the Training with Industry or I-GRAD programs at UT Arlington. Studies consist of an acquisition practicum with training at an assigned agency and a required seminar at UT Arlington.

5989. INDEPENDENT STUDIES IN MILITARY ACQUISITION (9-0). This course is reserved for military officers in the Training with Industry or I-GRAD programs at UT Arlington. Studies consist of an acquisition practicum with training at an assigned agency and a required seminar at UT Arlington.

6370. SEMINAR IN OPERATIONS MANAGEMENT (3-0). Doctoral seminar that is a comprehensive and integrative study of operations management that focuses on theoretical frameworks, applications of models, and methods of analysis. Prerequisite: Doctoral standing.

6371. INTEGRATED OPERATIONS STRATEGY AND RESEARCH (3-0). Linkages between the manufacturing and strategy development functions. Research issues within production/operations management. Current techniques/designs for achieving effective research. Prerequisite: Doctoral standing and OPMA 5361.

6380. RESEARCH IN OPERATIONS MANAGEMENT (3-0). Independent research under the supervision of a faculty member. May be repeated for credit. Prerequisite: Doctoral standing.

Statistics (STAT)

5301. INTRODUCTION TO STATISTICS (3-0). Introduction to statistics, designed to prepare graduate students to become competent consumers of statistical information that they will encounter in their professional and personal lives. Students should be able to perform basic statistical analyses and to think critically when interpreting statistical results. Topics include probability, random variables, sampling distributions, confidence intervals, tests of hypotheses, and simple regression. May not be counted as an MBA foundation course or elective. Prerequisite: MATH 1315.

5303. QUANTITATIVE ANALYSIS (3-0). Study of the methods of quantitative analysis used in business administration. Topics include matrix algebra, systems of linear equations, differential and integral calculus, linear programming, classical optimization, and a survey of management science models. Prerequisite: MATH 1315.

5325. ADVANCED STATISTICAL METHODS (3-0). Advanced statistical methods designed to prepare graduate students to become competent producers and consumers of statistical methods and to use statistical thinking to approach managerial decision making in their careers. They should be able to recognize the strengths and weaknesses of applicable techniques and when additional statistical expertise is required. Topics include multiple regression, correlation, experimental design and analysis, time series and other statistical methods with emphasis on their application to managerial decision making. It is strongly recommended that students who have no recent courses in statistics take STAT 5301 prior to STAT 5325.

5339. PRINCIPLES OF BUSINESS DATA MINING (3-0). This course provides an overview of the life cycle stages of a data mining project, contexts in which data mining is applied, a survey of data mining techniques, and measuring the effect of the resulting action. Additional topics include communicating with management representatives and IT professionals, ethical issues in data mining, and relationships with reference disciplines such as statistics, artificial intelligence, machine learning and database. Learning is facilitated by a combination of lectures, group projects, and homework assignments. This course is cross-listed with INSY 5339. Prerequisite: STAT 5325. May be taken concurrently.

Objective

The basic purpose of the Master of Science degree in Human Resource Management is to provide students with both a general knowledge of business and a specialized knowledge in human resource management. Students are exposed to the theory, research and practical applications of numerous content areas, including human resource strategy and policy, human resource planning, human resource information systems, career planning and development, employee relations law, organization change and development, employee selection, compensation, training and development and employee diversity in organizations. The program is designed to prepare students for human resource management careers in business and industrial firms, as well as government and nonprofit organizations.

Accreditation

The Master of Science in Human Resource Management is accredited by the AACSB–International (Association to Advance Collegiate Schools of Business–International).

Admission and Degree Requirements

Admission to the M.S. in Human Resource Management (MSHR) program is based on the completion of the general admission requirements of the Graduate School. For MSHR program admission, a score on the Graduate Management Admission Test and record of undergraduate academic performance are required. Students for whom English is not their native language must also achieve a TOEFL score of at least 550. International applicants that score below minimum acceptable levels on the verbal portion of entrance examinations may be admitted under the condition that they pass an English proficiency exam or complete UT Arlington's Graduate English Skills Program prior to beginning graduate coursework. Applicants are encouraged to submit with their application a resume that highlights professional and personal accomplishments, linguistic abilities, computer expertise and leadership experience. A standardized test score (GMAT) will not be used as the sole criterion for denying an applicant's admission to the MSHR program.

Specifically, multiple criteria are used to make admission decisions. Quantitative measures include an applicant's GMAT score and grade point average as calculated by the Graduate School. These measures are integrated into a formula, or index, that multiplies the grade point average by 200 and adds the total GMAT score. Index factors are weighed equally at the outset of the applicant evaluation. A graduate grade point average is used in the index when it is 3.0 or above and is based on at least 24 semester hours.

Along with grade point average and GMAT total score, admission criteria include the following:

1. GMAT or GRE sub scores (verbal and quantitative)
2. GMAT or GRE writing sample
3. Grades in specified undergraduate business and non-business courses (math, accounting, economics, statistics, for example)
4. Educational objectives and quality of written expression of the application essay
5. Letters of recommendation from three persons familiar with the applicant's academic background and/or work experience
6. Undergraduate major
7. General and specific program accreditation status of degree granting institution
8. Professional work experience
9. Professional certification or licensure

Department of Management

management.uta.edu

Areas of Study and Degrees

Human Resource Management
M.S.

Business Administration
M.B.A., Ph.D.
(See Program in Business Administration)

Master's Degree Plans

Thesis and Non-Thesis

Chair

Jeffrey E. McGee
209 Business
817.272.3166

Graduate Advisor

Becky Neilson

Graduate Faculty

Professors
Datta, Gray, Price, Quick, Rasheed

Associate Professors
Bell, McGee, McMahan, Wheeler

Assistant Professors
Benson, Casper, Khavul, Lavelle, Perez

Unconditional Admission

For unconditional admission, the applicant's composite total from the index must be 1080 or higher and items 1 through 5 above should strongly indicate potential for successful academic performance as a graduate HR student.

Students who are unconditionally admitted, have a minimum undergraduate grade point average of 3.00 as calculated by the Graduate School (or 3.00 at the graduate level), and enroll for a minimum of six semester credit hours will be eligible for available fellowship and/or scholarship support. A standardized test score (GMAT) will not be used as the sole criterion for determining fellowship and/or scholarship eligibility.

Probationary Admission

For an applicant with an index score below 1080, probationary admission may be available when at least three items of 1 through 5 above strongly indicate potential for successful academic performance as a graduate HR student. Items 6 through 9 will also be used to identify positive indicators for admission. Students who are admitted on probation will have one or more conditions specified, such as no grade less than "B" for the first 12 hours of graduate study.

Provisional, Deferred and Denied Admission

A provisional decision to admit may be granted when the applicant meets criteria for unconditional or probationary status but one or more applicant credentials are incomplete. A deferred decision may be made when an applicant's file is not sufficiently complete to make an admit or deny decision.

For an applicant with an index score less than 1040 and other evidence indicating lack of potential for academic success as a graduate HR student, admission will likely be denied. However, all applicant data will be carefully reviewed before an admission denial is made.

Curriculum

The program is designed primarily for the student who has a bachelor's degree in business administration. A minimum of 30 semester hours is required if the student chooses to write a thesis. If the student chooses not to write a thesis, a minimum of 36 semester hours is required. Students who do not have bachelor's degrees in business administration may have to take additional coursework (up to 18 semester hours) to acquire sufficient general business knowledge for effective performance as a human resource executive.

Coursework for the program includes six hours of required work in research and statistical methods, 15 hours of required work in human resources and policy, and thesis or elective hours in related management courses to complete the 30- or 36-hour requirements. For the students who choose to write a thesis, the six hours of thesis will involve working closely with one or more members of the graduate faculty from the Department of Management on a research project in a specialized area of interest in human resource management.

The curriculum is as follows:

1. Core Courses (18 semester hours)
   ACCT 5301 Financial Accounting
   ECON 5311 Economic Analysis II
   OPMA 5361 Operations Management
   MARK 5311 Marketing
   FINA 5311 Business Finance
   MANA 5312 Management
2. Advanced Courses (24 semester hours, thesis and non-thesis)
   a. Required human resource and policy courses (18 semester hours)
      MANA 5340 Strategic Human Resource Management
      MANA 5341 Staffing and Performance Management
      MANA 5322 Compensation and Benefits
      MANA 5323 Training and Development
      MANA 5327 Human Resource Law
      MANA 5336 Strategic Management
   b. Required research courses (six semester hours)
      BUSA 5325 Advanced Statistical Methods in Business
      MANA 5334 Organizational Consulting
3. Thesis (MANA 5698) and three elective semester hours.
4. Non-thesis option requires 12 elective semester hours.

Waivers and Transfer Credit

There are three types of required courses: deficiency, core and advanced. Programs of work will normally vary in length from 36 to 45 hours (plus deficiency courses), depending upon waivers granted. The first three waivers of core courses will be used to expand the number of electives in the advanced program rather than shorten the overall program. Additional waivers of core courses may reduce the program to a minimum of 36 hours. Applicants may have both deficiency and core courses waived without the requirement for a substitute course if they have completed, during the last 10 years, a similar course at a recognized college or university and received a "B" or better grade.* Extensions to this 10 year limit may be granted for managers and executives who have completed educational activities to remain current or have extensive related experience. Additionally, a maximum of 9 hours of advanced coursework may be transferred in from other AACSB accredited schools if approved by program advisor. Transfer of graduate classes from other universities will be considered on a case by case basis.

* Note: The University of Texas at Arlington and The University of Texas at Austin offer Business Foundations Programs (BFP) for non-business majors that provide solid foundations in basic business concepts. BFP courses and courses from equivalent programs for non-business majors at other colleges/universities may not be used for course waiver credit.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Management (MANA)

5182. INDEPENDENT STUDIES IN MANAGEMENT (1-0). Extensive analysis of a management topic.

5199. GRADUATE MANAGEMENT INTERNSHIP (1-0). Practical training in management. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

5299. GRADUATE MANAGEMENT INTERNSHIP (2-0). Practical training in management. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

5312. MANAGEMENT (3-0). Basic exploration of organizations in their environments. The elementary tools of management, which include: organizational objectives, social responsibility and ethics, policies, plans, and decision making; the design of organizations and jobs; the production and technology aspects of organization; the elements of leadership, behavior, and communication; and the elements of control and performance evaluation.

5320. ORGANIZATIONAL BEHAVIOR (3-0). Systematic study of behavioral problems in the complex organization. Analyzes the interaction of environmental and internal factors and their effects upon organizational behavior. The course is placed within the context of the organization process. Prerequisite: MANA 5312.

5321. COMPLEX ORGANIZATIONS (3-0). Provides the foundation for an in-depth knowledge of several important theories of management and organization. Attention to study of organizations, organizational effectiveness, comparative analysis of organizations, and the organization and its environment. Relates empirical findings and theoretical hypotheses with applied management concepts. Prerequisite: MANA 5312.

5322. COMPENSATION AND REWARD SYSTEMS (3-0). Management of compensation systems in business and other organizations; concepts models and practices related to wage and salary levels and structures; perceived equitable pay; individual performance appraisal, rewards and satisfaction; benefits and employee services.

5323. TRAINING AND DEVELOPMENT (3-0). Examines the components of training systems. Topics include assessing training needs and establishing objectives, developing training programs, selecting appropriate training techniques, and evaluating training outcomes.

5324. TEAM AND GROUP BEHAVIOR (3-0). A study in team and group dynamics, critical processes and practices. Topics include team composition and development, problem solving strategies and performance, conflict management, leadership process and work team strategies.

5325. LABOR AND EMPLOYEE RELATIONS (3-0). Examines union-management relations and considers the structure and functioning of the economic and social forces of importance at the policy level within both the firm and the union. Also considers non-union employee relationships.

5326. ORGANIZATION DEVELOPMENT AND CHANGE (3-0). This graduate seminar is taught as a field research practicum in which students use the organizational diagnosis model of Harry Levinson to develop information about the functioning of an organizational system. Recommendations for interventions and change at the individual, group, and organizational levels are considered in interaction with business leaders. Client organizations have included Chaparral Steel Company, AT&T, American Airlines, SiemensDematic, and EDS. Qualitative interview and quantitative questionnaire data collection and feedback methods are emphasized along with archival and observational data.

5327. HUMAN RESOURCE LAW (3-0). Coverage of statutory and case law in the employment setting. Emphasis placed on employment discrimination, compensation and benefits law; government agencies which administer and enforce employment laws are also reviewed. Prerequisite: MANA 5340.

5329. ORGANIZATION RESEARCH (3-0).

5330. NEGOTIATIONS AND CONFLICT MANAGEMENT (3-0). This course focuses on developing students negotiating skills in a variety of contexts. Throughout the course students will diagnose negotiation situations, strategize and plan for negotiations, and learn how to engage in more effective negotiations. The course also focuses on developing interpersonal conflict resolution skills and strategies.

5331. MANAGEMENT OF MULTINATIONAL ENTERPRISES (3-0). Focuses on the international dimensions of strategy and organization and provides a framework for formulating strategies in an increasingly complex global economy. The course seeks to provide students with an understanding of the cultural, political, competitive, technological, legal, and demographic environments in which multinational firms operate. It then examines the nature of global competition by exploring the characteristics of global industries and strategies that have been successful in an international context. Also covered are issues related to organizational design and strategic control in the management of multinational enterprises.

5332. MANAGING DIVERSITY IN ORGANIZATIONS (3-0). Examines implications of employee diversity in organizations, including human resource and organizational behavior issues related to aspects of diversity. Includes study of the changing demographics of workers, effects of diversity on organizational performance, and ways of effectively managing in organizations having applicants, employees, and customers from diverse backgrounds. Research on diversity issues is examined, as are process of stereotyping and myths and misperceptions about diversity issues. Legislation related to diversity is also reviewed.

5333. MANAGEMENT OF TECHNOLOGY AND INNOVATION (3-0). Management of the innovation and the technology commercialization process in both the startup and corporate environment. Students will understand how to identify and assess the feasibility of technology-based innovations, how to turn these innovations into products and services, and how to introduce them in the market. Through case studies, students will explore innovations across a range of emerging technologies and have an opportunity to assess the options for commercializing an emerging technology from the view point of either a startup firm, a potential investor, or a corporation. Students may work on their own innovation or an innovation arising from either university research, an existing business, or their current employer.

5334. ORGANIZATION CONSULTING AND RESEARCH (3-0). Explores internal and external consulting to business organizations. Emphasis on the management of the change process through the stages of data gathering, diagnosis, analysis, and recommendation.

5336. STRATEGIC MANAGEMENT (3-0). Integration of the MBA curriculum into a cohesive whole. Treats the several elements of business administration by use of business policy cases and decision simulation methods. Satisfactory completion of this course fulfills the Comprehensive Examination requirement for MBA students. Prerequisite: Must be taken in last semester or with permission of the Graduate Advisor.

5337. ETHICS AND THE BUSINESS ENVIRONMENT (3-0). Uses a strategic perspective to examine ethics, government and the world economy, and how they may affect relationships between business organizations and other institutions of our society. Particular attention is paid to issues such as leadership, technology, and internationalization concordant with the breadth requirements of the UTA MBA plus public policy concerns involving the natural environment, gender and minority issues. Course activities will include class discussion and analysis of societal dilemmas, contemporary cases and current news stories.

5338. CAREERS AND MANAGING IN A CHANGING ENVIRONMENT (3-0). Presents practical and theoretical perspectives on careers and managing in a changing work environment. Includes self assessment, career plan development, informational interviews, readings and exercises designed to lead to a better understanding of managing self and others.

5339. ENTREPRENEURSHIP (3-0). New venture opportunity assessment, formation, and development in startup and corporate environments. Students will understand the role of entrepreneurship in the economy and the attributes of entrepreneurial behavior. Students will learn how to asses the market and financial feasibility of a new venture as well as understand how to use equity and debt financing, how to select between starting up, franchising, or buying a business, how to lead the growing company, and how to address family business dilemmas. The cornerstone of the course will be a feasibility assessment project that leads to a business plan for a new venture of the student's choice. For the project, students can explore either an original new venture idea, an already existing venture concept (for example, a franchise), or a new business opportunity in need of assessment for an existing firm or their current employer.

5340. STRATEGIC HUMAN RESOURCE MANAGEMENT (3-0). Emphasizes strategic perspective of modern human resource management theory and practice. Topics include human resource planning, staffing, training and development, compensation, performance appraisal, and labor and employee relations.

5341. STAFFING AND PERFORMANCE MANAGEMENT (3-0). This course covers employee recruitment, selection and performance appraisal. Topics include: recruitment strategies and methods, methods of employee selection, performance planning, development and validation of appraisal instruments, implementation and conduct of performance appraisal, and performance feedback and counseling.

5342. PREVENTIVE STRESS MANAGEMENT (3-0). Examines the organizational demands that cause stress. Identifies the psychophysiology of the stress response and the individual/ organizational costs of distress. Emphasis is placed on the principles and methods of preventive stress management, such as social support, exercise, and the relaxation response.

5350. EFFECTIVE LEADERSHIP (3-0). This graduate course uses self-assessment testing with feedback, case studies, selected readings, and guest lectures from successful leaders and top executive coaches to create a learning laboratory for mature and motivated graduate students of leadership.

5382. INDEPENDENT STUDIES IN MANAGEMENT (3-0). Extensive analysis of a management topic.

5392. SELECTED TOPICS IN MANAGEMENT (3-0). In-depth study of selected topics in management. May be repeated when topics vary.

5398. THESIS (3-0). Thesis 5398 graded R (Research) or F only. Prerequisite: STAT 5325 and approval of Graduate Advisor.

5399. GRADUATE MANAGEMENT INTERNSHIP (3-0). Practical training in management. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience of activities. Prerequisite: Minimum nine graduate semester hours completed.

5698. THESIS (6-0).

6182. INDEPENDENT STUDIES IN MANAGEMENT (1-0). Extensive analysis of a management topic.

6282. INDEPENDENT STUDIES IN MANAGEMENT (2-0). Extensive analysis of a management topic.

6318. SEMINAR IN ORGANIZATIONAL THEORY (3-0). Advanced study in the theory and research of organizations.

6328. SEMINAR IN BUSINESS POLICY (3-0). Advanced study in the theory and research bases of business policy and strategic management.

6329. ADVANCED RESEARCH METHODS (3-0). In-depth coverage of selected topics in the design of research and analysis of data; topics include philosophy of science, theory of measurement, complex experimental and quasi-experimental designs.

6338. SEMINAR IN ORGANIZATIONAL BEHAVIOR (3-0). Advanced study in the theory and research of organizational behavior.

6348. SEMINAR IN PERSONNEL/HUMAN RESOURCE MANAGEMENT (3-0). Advanced study in employee selection, performance appraisal, compensation, training and development, human resource policy and strategy, and other areas of human resource management.

6382. INDEPENDENT STUDIES IN MANAGEMENT (3-0). Extensive analysis of a management topic.

6390. ADVANCED TOPICS IN MANAGEMENT (3-0). In-depth study of selected topics in management. May be repeated when topics vary.

6392. RESEARCH IN ADMINISTRATION (3-0). Independent research under supervision of a faculty member.

Objective: M.S. Program

The objective of the Master of Science in Marketing Research is to prepare qualified students for careers as managers in marketing research, marketing planning, product/brand management, and related fields. Students are exposed to a range of coursework related to the theory and practice of marketing research. In addition, courses in information systems and management science focus on the latest theory and practice in those areas relevant to marketing research. Students are required to participate in an internship program.

Accreditation

The Ph.D. and Master of Science degree in Marketing Research degrees are accredited by the AACSB International–The Association to Advance Collegiate Schools of Business.

Admissions

Admission to the M.S. in Marketing Research (MSMR) program is based upon the completion of the general admission requirements of the Graduate School. For MSMR program admission a score on the Graduate Management Admission Test (GMAT) and record of undergraduate (and post-graduate, if applicable) academic performance are required. Students for whom English is not their native language must achieve a satisfactory TOEFL score (specified below). International applicants who score below minimum acceptable levels on the verbal portion of entrance examinations may be admitted under the condition that they pass an English proficiency exam or complete UT Arlington's Graduate English Skills Program prior to beginning graduate coursework.

Applicants are encouraged to submit with their application a resume that highlights career objectives, professional and personal accomplishments, computer expertise, and leadership experience. Applicants with two to five years of experience are preferred, though postgraduate work experience is not a requirement for admission. A standardized test score (GMAT) will not be used as the sole criterion for approving or denying an applicant's admission to the MSMR program.

A decision to admit unconditionally is made based on the totality of information listed below, and not on any single factor alone.

1. Undergraduate degree: the applicant holds at least a bachelor's degree from an accredited U.S. college or university, in any discipline, or, for applicants who do not hold a bachelor's degree from an accredited U.S. college or university, a degree equivalent to a U.S. bachelor's degree, as judged by the UT Arlington Graduate School;
2. Grade-point average (GPA): a GPA of at least 3.1 on a 4.0 scale, as calculated by the Graduate School, in the last 60 semester-hours of college or university study;
3. Graduate admission test score: a score of at least 580 on the Graduate Management Admission Test (GMAT), with both verbal and quantitative scores at the 50th percentile or better.
4. TOEFL score: for students who do not hold a degree from an accredited U.S. college or university, a score on the Test of English as a Foreign Language of at least 230 (computer-based) or 570 (paper);
5. Recommendations: favorable letters of recommendation from three persons qualified to judge the applicant's potential for graduate study and work in marketing research who are not friends or relatives;

Department of Marketing

www2.uta.edu/marketing
www2.uta.edu/msmr

Areas of Study and Degrees

Marketing Research
M.S.

Business Administration
M.B.A., Ph.D.
(See Program in Business Administration)

Master's Degree Plans

Non-Thesis

Chair

Carl McDaniel
234 Business
817.272.2876

Ph.D. Advisor

James Munch
225 Business
817.272.2279

Ph.D. Major Field Coordinator

Xueming Luo
225 Business
817.272.2279

MSMR Director

Robert Rogers
202 Business
817.272.2340
Toll Free: 866-296-3256

Graduate Faculty

Professors
Chonko, McDaniel

Associate Professor
Luo

Assistant Professors
Briggs, Freling, Grisaffe, Jaramillo, Mani, Yang

6. Commitment to the profession: the applicant shows, by a combination of work experience, prior study, and a written statement of purpose, a suitability for and a commitment to pursue a career in marketing research.

Admission may be denied if the applicant is so far below expectations on any combination of the criteria listed above as to indicate that he or she would not be able to perform at an acceptable level in the MSMR program.

An applicant may be admitted provisionally if he or she appears to meet the requirements for unconditional admission but the official documentation is lacking for one or more requirements. Such documentation must be provided within the first semester of study in the program.

Assistantships and Scholarships

1. Graduate assistantships may be offered to outstanding applicants, using funds provided through the College of Business Administration, based on the unconditional admission criteria listed above. Nominations by director.
2. MSMR scholarships: Funds provided by the member firms on the MSMR Advisory Board may support competitive scholarships to students admitted to the MSMR program.

New Students

- Pending funds availability, scholarships may be awarded to new MSMR students entering the program to study full-time (i.e., at least 9 graduate hours) in the fall or spring semesters. (Students who enter in the summer term are considered to be new students in the fall semester for purposes of scholarship award.)

Continuing Students

- Pending funds availability, scholarships may be awarded to continuing students in the fall semester based on a rank ordering of eligible students.

Degree Requirements

The program is designed primarily for students who have earned a Bachelor of Business Administration (BBA) degree (or equivalent). For this student, the program consists of a minimum of 37 semester hours. Students who do not have a BBA may have to take additional foundation coursework (up to 21 semester hours) to acquire sufficient general business knowledge for effective performance as a marketing research professional. Foundation courses may be waived if equivalent coursework has been completed with a grade of B or better. Applicants are encouraged to complete deficiency requirements prior to applying or at the beginning of their studies. College courses in business math (including probability and set theory, linear equations, matrix algebra, compound interest, annuities, and differential and integral calculus), business statistics, and computers (including general topics, spreadsheets and word processing and electronic communications) may be taken prior to entry in the program.

The minimum advanced program of 37 semester hours contains 30 hours of marketing courses plus six hours of actual marketing research field work and the 1-hour Professional Development Seminar. The required curriculum is as follows:

1. Foundation Courses (21 semester hours)
   ACCT 5301 Accounting Analysis I (Financial)
   ACCT 5302 Accounting Analysis II (Managerial)
   ECON 5311 Economic Analysis II (Micro & Macro)
   MARK 5311 Marketing
   MANA 5312 Management
   FINA 5311 Business Financial Management
   STAT 5325 Advanced Statistical Methods
2. Advanced Courses (37 semester hours)
   MARK 5320 Buyer Behavior and Creative Problem Solving
   MARK 5327 Research for Marketing Decisions
   MARK 5328 Product Management
   MARK 5336 Advanced Research Analysis
   MARK 5337 Marketing Information Management
   MARK 5338 Qualitative Research
   MARK 5139 Professional Development Seminar
   MARK 5340 Marketing Strategy
   MARK 5399 Advanced Topics in Marketing Research
   MARK 5396 Marketing Research Internship I
   MARK 5397 Marketing Research Internship II
   MARK 6305 Marketing Models I
   BCOM 5375 Advanced Business Communication Theory and Practice

Marketing Research Internship

The Marketing Research Internship (MARK 5396 and MARK 5397) comprises 24 weeks of paid, full-time work experience in either a marketing research company or a corporate marketing research department. Sponsoring companies will be approved by the marketing research program advisor. During the internship, the student will have primary responsibility for at least one marketing research study. At the completion of the internship, the student will present a paper to the graduate faculty summarizing his or her internship experiences and the results of the research study. In special situations, and with the approval of the program advisor, a one-year, part-time internship may be substituted for the full-time internship.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Marketing (MARK)

5139. PROFESSIONAL DEVELOPMENT SEMINAR (1-0). This course exposes MSMR students to the wide variety of career opportunities available within the marketing research industry. It provides students with information, awareness, tactics and practice in conducting a professional employment search and a professional interview, as well as handling offer negotiations.

5142. ADVANCED TOPICS IN MARKETING RESEARCH (1-0) Presentation and analysis of cutting edge topics in marketing research.

5182. INDEPENDENT STUDIES IN MARKETING (1-0). Extensive analysis of a marketing topic.

5199. GRADUATE MARKETING INTERNSHIP (1-0). Practical training in marketing. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

5282. INDEPENDENT STUDIES IN MARKETING (2-0). Extensive analysis of a marketing topic.

5299. GRADUATE MARKETING INTERNSHIP (2-0). Practical training in marketing. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

5311. MARKETING (3-0). Survey of activities involved in marketing. Emphasis is on developing a managerial point of view in planning and evaluating marketing decisions of the firm. Analyzes decisions with respect to products, price, channel, and promotional variables and considers questions relating to cost efficiency, demand, social responsibility and regulations.

5320. BUYER BEHAVIOR (3-0). Examines the theoretical and empirical material on the individual and group behavior of people performing in the consumer role. Topics covered include perception, learning, attitude formation and change, personality, culture, social class, and reference groups. Behavioral science data provides a basis for the explanation of consumer behavior and the integration of these findings into current marketing practices. Prerequisite: MARK 5311.

5326. INTEGRATED MARKETING COMMUNICATION (3-0). A managerial approach to coordinating all promotional activities, including direct marketing, advertising, sales promotion, personal selling, public relations, publicity and packaging to produce a unified market-focused message. Message development, placement and timing are examined within the context of the role each type of promotion plays in marketing strategy development. Additional topics examined include media definition and analysis, the communication process, legal and ethical considerations, and budgeting. Prerequisite: MARK 5311.

5327. RESEARCH FOR MARKETING DECISIONS (3-0). Overview of information needs of the marketing decision-maker. Emphasis on methods and techniques that may be employed for the collection and analysis of primary data. Major topics include design of research projects, generating primary data, questionnaire design, samplings for survey research, experimental design, controlling data collection, and data analysis. Prerequisites: MARK 5311 and STAT 5301.

5328. PRODUCT MANAGEMENT (3-0). Management of the firm's product or service offerings. Topics include new product development, new product screening, evaluation of existing products, product line and mix analysis, product abandonment decisions, the brand manager's role, the new product planning department, and others. Emphasis on the development of meaningful criteria for decision-making in the product area and on the development of information systems to suggest, screen, and monitor products. Prerequisite: MARK 5327.

5329. SALES AND SALES MANAGEMENT (3-0). Examines the skills required for successful personal selling and sales management in today's world, with emphasis on industrial markets. Discusses the links between business trends and the resulting need for new approaches to the sales management challenges of planning, implementing, and evaluating a sales program. Special topics include the strategic importance of the sales force, customer/supplier partnering, multi-function collaboration, technology's role in altering traditional customer-access channels, the organization of the sales function for profitability vs. revenue, and the development of effective major account strategies.

5330. SERVICE MARKETING MANAGEMENT (3-0). Addresses marketing theory and applications in health care, financial, and other service industries. Focus is on solving marketing problems unique to service organizations. Prerequisite: MARK 5311.

5331. INTERNATIONAL MARKETING (3-0). Management of marketing in international business. Includes marketing research, pricing, promotion, and distribution in the international environment. Examines marketing problems arising from various degrees of foreign involvement (exports, licensing, foreign subsidiaries). Prerequisite: MARK 5311.

5332. BUSINESS-TO-BUSINESS MARKETING (3-0). Marketing strategies for businesses targeting other businesses. Included are frameworks for analysis of marketing opportunities. Business-to-business e-commerce is examined. Prerequisite: MARK 5311.

5334. STRATEGIC INTERNET MARKETING (3-0). Through theoretical investigation, brainstorming, and case analysis, students develop the skills and strategies that are necessary for effective marketing via electronic media. With particular emphasis on Internet-based media, topics include developing an online corporate identity, online market research, interactive and database Web site strategies, creating and maintaining Web site content, proactive marketing tactics, analysis of Web site statistics, measuring online marketing results, and development of a strategic Internet marketing plan. Prerequisite: MARK 5311.

5335. RETAILING, FRANCHISING, AND ENTREPRENEURSHIP (3-0). Course offers exposure to elements of retail management, franchising, and entrepreneurship, including planning, promotion, pricing, and merchandising. Prerequisite: MARK 5311.

5336. ADVANCED RESEARCH ANALYSIS (3-0). Focuses on problems of data analysis in marketing research. Considers application of multivariate statistics, including multiple regression, discriminant analysis and factor analysis to marketing research problems. Considerable time also devoted to multi-attribute preference models such as conjoint analyses. Prerequisite: MARK 5327.

5337. MARKETING INFORMATION MANAGEMENT (3-0). Course focuses on various types of marketing data bases and computer-based research systems designed for the collection, storage, usage, and reporting of disaggregated data. Topics include single-source data, geodemographics, and micro-merchandising systems. Case studies and data analysis projects are utilized. Prerequisite: MARK 5327.

5338. QUALITATIVE RESEARCH (3-0). Examines the nature of qualitative research and its growing value to the marketing research community. The role of focus group interviewing, types of focus groups and their conduct are extensively explored. Other topics

include depth interviewing, projective techniques, observational research, the delphi method, environmental forecasting and futuring. Prerequisite: MARK 5327.

5340. MARKETING STRATEGY (3-0). A case course designed to give the student an opportunity to utilize the managerial and analytical tools that he or she has acquired. Uses case studies which require a realistic diagnosis of company problems, development of alternative courses of action, and the formulation of specific recommendations. Prerequisite: MARK 5311 and six hours of advanced marketing coursework.

5342. ADVANCED TOPICS IN MARKETING RESEARCH (3-0). Presentation and analysis of cutting edge topics in marketing research. Prerequisite: consent of Program Director.

5382. INDEPENDENT STUDIES IN MARKETING (3-0). Extensive analysis of a marketing topic.

5396. MARKETING RESEARCH INTERNSHIP I (3-0). The internship involves part-time or full-time training and work experience in a company approved by the MSMR program advisor.

5397. MARKETING RESEARCH INTERNSHIP II (3-0). This is a continuation of Internship I and involves part-time or full-time work experience in a company approved by the MSMR program advisor. The student will be assigned primary responsibility for at least one marketing research project during Internship I or II. At the completion of the course, the student will present a research paper to the MSMR faculty.

5398. THESIS (3-0). Prerequisite: STAT 5325 and approval of Graduate Advisor.

5399. GRADUATE MARKETING INTERNSHIP (3-0). Practical training in marketing. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

5698. THESIS (6-0). Prerequisite: STAT 5325 and approval of Graduate Advisor.

6302. ADVANCED CONSUMER BEHAVIOR (3-0). Advanced study of current research underlying individual and group behavior of consumers and industrial buyers. Theories from the behavioral sciences will be applied to consumer behavior from descriptive, predictive, and normative perspectives.

6305. MARKETING MODELS I (3-0). Study of basic models of market and consumer behavior with particular attention to the use of classical statistical methods such as ordinary and generalized least squares, factor analysis, discriminant analysis and correspondence analysis, cluster analysis, and canonical correlation. Applications include perceptual mapping, multiattribute modeling, conjoint analysis, and product planning models. Prerequisite: STAT 5325.

6310. MARKETING STRATEGY AND MANAGEMENT (3-0). Examination of latest theories in corporate and marketing strategies. In-depth review and analysis of latest theories and research in product/service development, pricing, promotion, and distribution.

6327. ADVANCED MARKETING RESEARCH METHODS (3-0). Course deals with the wide variety of marketing research methodologies other than experimental research. It focuses on data analysis only to the extent that it impacts on the design of the associated research method. Advanced topics include hybrid and adaptive conjoint analysis, discrete choice models, adaptive perceptual mapping, Lisrel modeling and Web-based research designs. Prerequisite: MARK 5336 and MARK 6305.

6331. ADVANCED GLOBAL MARKETING THEORY (3-0). Examines the antecedents and consequences of global marketing. Includes the politics of global marketing, emerging global strategies, the latest concepts of market entry and development, and global marketing performance and evaluation.

6390. TOPICS IN MARKETING (3-0). Advanced doctoral level work in special topics in marketing. May be repeated when topics vary.

6392. INDEPENDENT STUDY IN MARKETING (3-0). Doctoral level analysis of marketing topic.

Business Communication (BCOM)

5375. ADVANCED BUSINESS COMMUNICATION THEORY AND PRACTICE (3-0). Examines theory of effective oral and written communication. Discusses techniques for improved research, report writing and presentation. Also stresses presentation media and computer graphics for reports and presentations.

The College of Education

Dean: Jeanne M. Gerlach, Ed.D.
500 Hammond Hall • Box 19227 • 817.272.2591 • www.uta.edu/coed

Mission and Philosophy

The mission of the UT Arlington College of Education is to develop and deliver an practitioner program that ensures the highest of teacher, administrator and allied health science preparation and performance and to be a recognized contributor in the field of educational and allied health science research and practice through effective teaching, quality research, and meaningful service. The College is committed to the advancement of teaching and learning in all educational environments, at all levels, and for all students.

History and Overview

In 1979, The Center for Professional Teacher Education, now the College of Education, began offering coursework at the graduate level. In the late 1980s, a Master of Education and Teaching degree (M.Ed.T.) was approved. This degree served teachers who wanted the opportunity to extend their knowledge base in education and related fields with graduate coursework. The degree enabled students to combine graduate coursework in education with study in an academic discipline related to their teaching field or specialization. Its success led to the expansion of education offerings to include additional certifications in Reading and Educational Administration as well as Supplemntal Certifications in Bilingual Education (BIL), English as a Second Language (ESL), and Gifted and Talented (G/T).

As one of only a few Texas universities authorized to offer post baccalaureate teacher certification at the graduate level, the College of Education began offering graduate level teacher certification with an M.Ed. T. in the summer of 1998. With expansion of program offerings, the M.Ed.T. no longer met the needs of all degree-seeking students. In 1999, the College of Education added two new master degree programs, a Master of Education (M.Ed.) in Educational Administration and a Master of Education (M.Ed.) in Curriculum and Instruction.

The M.Ed.T. is now offered exclusively to students seeking teacher certification (early childhood - grade 4, middle level, secondary and all level) at the graduate level. The M.Ed. in Educational Administration is available to students pursuing the Principal Certificate (Mid-Management). And, the M.Ed. in Curriculum and Instruction (C. & I.) is for educators wanting to extend their knowledge in education and related fields. The M.Ed. in C. & I. also serves students wanting to earn a master's degree along with Reading Specialist Certificate and the Master Reading Teacher Certificate. A Supplemental Certification in teaching Bilingual Education, English as a Second Language and Gifted and Talented may also be added to the M.Ed. in C. & I. Superintendent certification is also available.

The doctor of philosophy (Ph.D.) in K-16 Educational Leadership and Policy Studies was first offered in the summer of 2007. With the advancement in technology, many graduate courses are available via the Internet with additional courses being added each semester. The College of Education has an enrollment of more than 1,000 students with approximately 600 students pursuing graduate level degrees certificates.

Scholastic Activity and Research Interests of the Faculty

The faculty of the College of Education strives to model the characteristics of the most competent professional educators for all students aspiring to membership in the education and exercise, sport and health studies professions. Faculty members in the College of Education have consistently been recognized for their excellence in teaching in the University and beyond. They have received numerous honors, including The University of Texas System Chancellor's Council Teaching Award, election to UT Arlington's Academy of Distinguished Teachers, and the Piper Professor award at the state level. They have also served as guest lecturers at universities across the country. In addition, numerous faculty have received recognition for their published scholarship and professional contributions.

Faculty scholarship is also valued by the College of Education for its potential impact on the increased effectiveness of teaching and learning in professional education preparation programs and in the public and private school setting. Scholarly and research activities cover a variety of areas represented by the expertise of each individual faculty member.

Evidence of service to the College of Education, the University, the community and the practicing profession is also expected of the faculty. This includes service to local constituencies such as school districts, education service centers, parent-teacher groups, professional associations, and/or other agencies and organizations dedicated to the improvement of teaching and learning, as well as involvement in outreach programs, community events, civic leadership, and the promotion of alumni support and involvement. The extensive service activities of faculty members in the various departments have garnered additional awards from the University, the community, the state and a variety of professional organizations.

Department of Curriculum and Instruction

Research interests and publications include the areas of multicultural education, current issues in curriculum and instruction, aggression and violence in young children, classroom management, innovations in math and science education, stress management in learning, gender issues in the classroom, and reducing math anxiety. Grants for expanding the knowledge of teacher preparation and the knowledge base of middle school science teachers have been repeatedly funded. In the literacy field, faculty have researched and published articles and book chapters on emergent literacy in young children, literacy policy making, reading and writing across the curriculum, literature-based teaching in English as Second Language classrooms, the use of basal reading materials and children's literature in teaching children to read, and structural analysis comparisons of children's literature classics. In the area of early childhood education, faculty are researching historical and theoretical connections in the lives of Piaget and Montessori, developmentally appropriate practices, the incidences of rage and anger in young children in day care settings, and teacher certification standards.

Department of Educational Leadership and Policy Studies

In Educational Administration, research activities and publications have focused on school leadership trends, developing collaboratives between university, public, private and charter schools, fostering creativity in learning organizations, and studying school policy, governance, and finance issues.

Department of Kinesiology

Faculty research interests and publications include the study of respiratory distress during maximal work, metabolic cost of free weight circuit training, the developmental kinematics of young females overarm throwing, and the study of hyperbaric oxygen effects on treatment of diseases. Other research includes the study of critical power in relationship to cycling time performance, wheelchair sport performance enhancement, the in vivo 4-Androstene-3, 17-dione and 4-Androstene-3, 17-diol supplementation in young males, and body composition of postmenopausal women according to spine (AP L2-4) bone mineral density. Additionally, Kinesiology faculty publish research on the context-based teaching-learning processes within preservice physical education lessons and the impact of curricular interventions on outcomes.

Special Programs and Opportunities

The College of Education offers a variety of special opportunities for learning and professional growth for graduate students. A variety of clinical field experiences, visiting authors and experts, membership in professional organizations, and specialized library resources are some of the special programs and opportunities that enrich students.

- Several graduate courses offer links to field experiences that greatly enrich the course content. This includes regular observation and participation in PK-12 classrooms, individualized administrative internships for students seeking Principal Certification, and summer literacy clinics that bring children to campus to work with graduate students earning the Reading Specialist Certification.
- Graduate courses routinely host authors and experts in various areas to share their experiences and insights. Guests include outstanding professors from other area universities, award-winning educators, and others.
- Student organizations offer graduate students leadership opportunities.
- Student awards, scholarships, and graduate assistantships are available to graduate students who qualify.
- To support College of Education programs, the Library houses a Curriculum Collection and a Juvenile Collection for student use in conjunction with their education coursework.
- The Department of Kinesiology presents several lecture series and seminars, including the Anderson Sports Performance Lecture Series, the UTA/American College of Sports Medicine Lectures, the Exercise Science Seminars, the American College of Sports Medicine Health Fitness Instructor Workshop, the American College of Sports Medicine Health Fitness Instructor Certification Examination and the Dance Ensemble Concert.
- The College of Education offers creative and flexible scheduling of graduate coursework to meet the needs of professional educators, including Saturday, weekend, interim and evening classes year-round.
- Distance learning via the Internet is available for a variety of courses.

Teacher Career Services

Education students are assisted in securing positions as teachers and administrators through the efforts of the Office of Teacher Career Services. The office maintains good working relationships with area school districts, working in partnership to match job openings with qualified applicants completing their professional training at UT Arlington. Students are assisted in writing effective résumés and developing exemplary interview skills. The office sponsors two on-campus Teacher Career Days each year and an online database of currently available positions and links to similar information elsewhere within the state and across the nation. Contact: Dr. Frank Gault, Director, 817.272.3259.

Online Master's Degree

The College of Education offers graduate students convenience and quality with a master's degree in Curriculum and Instruction available entirely over the Internet. This program option includes cutting-edge graduate courses that can also lead to three Texas professional credentials: Reading Specialist, Master Reading Teacher Certifications and English-as-a-Second Language Certification. Students from as far away as New York, Georgia, and Nebraska as well as Americans teaching abroad have enrolled in Internet courses through this award-winning program. Contact: Nancy L. Hadaway, 817.272.2240.

Troops to Teaching Program

For military personnel, the T3 Program offers a five-course sequence of graduate-level education courses for individuals with baccalaureate degrees seeking a Texas Secondary Teacher Certificate. All courses in the program are available via the Internet. Applicants for the program must meet certain UT Arlington Graduate School and College of Education admission standards, as well as satisfactorily completing a required field experience. Contact: Dr. Jeannine Hirtle, Coordinator, 817.272.7568.

College of Education Centers

Certification and Advising Center

The Certification and Advising Center helps College of Education students succeed by providing the information and support services needed to achieve their academic and career goals. The Certification Officer and the Academic Advisors are available to assist students in various stages of preparing for or furthering their careers as educators and school administrators. The center provides information and advising regarding College of Education admission requirements and degree plan options, as well as the academic content areas, field-based experiences, state examinations, and application procedures needed to obtain teacher, principal, superintendent, and special program certification in Texas. Information on nontraditional certification options and additional support in preparing for the state exams are also available. Contact: Dr. Louann Schulze, Assistant Dean for Student Affairs, 817.272.2956.

Office of Field Experiences

Prospective teachers apply their knowledge of content and pedagogy during both a field-based internship and a residency semester arranged through the Office of Field Experiences. The internship practicum gives teacher education students the opportunity to observe and interact with diverse student populations in a variety of formal and informal educational settings at locations throughout the Metroplex. During the residency practicum, these preservice teachers

refine their teaching skills by working directly with students in classrooms at designated public schools in the area, guided by a cooperating mentor teacher and supervising university faculty. Contact: Dr. Lee Ann Dumas, 817.272. 2545.

The Office of Development

The Office of Development, Grants, and Contracts is responsible for planning, managing, and directing the College of Education's efforts to attract supplemental funding from federal and state governments, corporations, foundations, groups, and individuals to support and enhance the school's strategic initiatives, academic programs, service activities, and research efforts. The office offers technical assistance to College of Education faculty in the identification, development, and submission of grant proposals and requests for financial assistance in support of individual research projects and program development initiatives. In addition, the office coordinates fund-raising events for the College of Education. Contact: College of Education, 817.272.2591.

Center for Educational Technology

The College of Education and UT Arlington are committed to ensuring that all learners have equitable opportunities to employ a variety of technological tools to enhance the learning process. Educational technology provides the opportunity to offer education anywhere, any time for everyone. The Center for Educational Technology addresses statewide technology initiatives for teachers and students in the State of Texas. The center supports the faculty and students in their efforts to successfully use and understand the many new technology tools and strategies. The Center for Educational Technology also assists faculty in the development and implementation of interactive technologies, which increases the effectiveness of their pedagogy. Contact: College of Education, 817-272-2591.

Department Centers

Center for Bilingual Education

Created in response to the growing number of English language learners, the Center for Bilingual Education strives to increase the number of qualified bilingual and ESL teachers in Texas through bachelor and masters-level degree programs. The center provides technical support to school districts in the areas of bilingual and ESL education, as well as preservice and inservice teacher training in the areas of the Bilingual ExCET, the Texas Oral Proficiency Test, cross-cultural communication, and effective teaching practices for language-minority students. Contact: Dr. Luis Rosado, Director, 817.272.7567.

Center for Science Education

The College of Education and the College of Science work collaboratively through the Center for Science Education to increase the number of new and existing educators in both formal and informal settings who are adequately prepared to deliver challenging, standards-based science, mathematics, and technology (SMT) instruction through the application of new, research-validated models for teaching and learning. The center also coordinates the University's outreach to school districts, community-based organizations, and local businesses in support of efforts to guide all PreK-16 students, especially those in urban settings, in achieving higher standards of learning in SMT. Contact: College of Education, 817.272.2591.

Programs

Graduate work in the College of Education at UT Arlington may lead to the following degrees and certifications:

Degrees

Master of Education in Teaching (M.Ed.T.)
Master of Education (M.Ed.) in Curriculum and Instruction
Master of Education (M.Ed.) in Educational Administration

Certifications

Early Childhood-Grade 4 Teacher
Early Childhood-Grade 4 Bilingual Teacher
Middle Level Teacher (Grades 4-8)
Secondary Teacher (Grades 8-12)
Reading Specialist
Reading Specialist/MRT/ESL
Principal
Superintendent

Supplemental Certification

Bilingual Education
English as a Second Language
Gifted and Talented

In addition, the College of Education offers a joint doctoral program with the School of Urban and Public Affairs.

Department of Curriculum and Instruction

www.uta.edu/coed/curricandinstruct

Areas of Study and Degrees

Early Childhood - Grade 4 Teacher Certification
Middle Level (Grades 4-8) Teacher Certification
Secondary Teacher Certification (Grades 8-12)
All-Level Teacher Certification
M.Ed.T.
Reading Specialist Certification
Reading Specialist/MRT/ESL
Bilingual Education
English as a Second Language
Gifted and Talented

Master's Degree Plans

Non-Thesis

Chair

John Smith
320A Science Hall
817.272.7448
smithj@uta.edu

Graduate Advisor

Nancy Hadaway
414 Hammond
817.272.2240
hadaway@uta.edu

Graduate Faculty

Professors

Crow, Gerlach, Hadaway

Associate Professors

Cavallo, Davis, Fox, Kribs-Zaleta, Leffingwell, Rosado

Assistant Professors

Brown, Daza, Gomez, Hungerford-Kresser, Lee, Ruebel, Semingston, Theriot, Tice, Wiggins

Clinical Faculty

Arrowood, Collins, Denson, Melton, Smith

Programs

The Department of Curriculum and Instruction currently offers the Master of Education in Teaching (M.Ed.T.) and the Master of Education in Curriculum and Instruction (M.Ed.) Supplemental Certifications are offered for: Bilingual Education (BEEP), English as a Second Language (ESL) and Gifted and Talented. Distance learning opportunities in all degree programs are available for those interested (see section on Distance Learning Options). Students pursuing a master's degree are required, with the assistance of the Graduate Advisor and graduate faculty, to complete a tentative program of work. This program of work is filed in the College of Education Graduate Advising Office and may be modified as needed. All master's degrees in Curriculum and Instruction are comprised of a minimum of 36 semester hours and are non-thesis. Candidates for master's degrees are required to submit a final program of work and complete a designated capstone course for their program: EDUC 5395 for M.Ed.T., EDUC 5397 for M.Ed. in Curriculum and Instruction, and LIST 5317 for M.Ed. with emphasis in Literacy Studies.

Objective

The Master of Education in Teaching (M.Ed.T.) degree is designed for those wishing to pursue initial teacher certification at the graduate level. The Master of Education in Curriculum and Instruction (M.Ed.) degree provides opportunities for those interested in developing effective teaching, research, and leadership skills that are congruent with an ever-expanding theoretical knowledge base in the field. The M.Ed. enables teachers to specialize in advanced coursework in their teaching fields and other professional certification areas designed to meet a variety of professional goals. Both degrees help prepare graduates to reflect upon their own teaching as well as on the state of education as a whole and to better understand the linkage between the theory and practice of teaching. Each student's program of study is planned individually and provides academic and/or pedagogical specialization within the context of the general field of education. Graduate faculty in the College of Education as well as those in departments and in the colleges throughout the University work closely with students in formulating study plans that meet the students' objectives and individual goals for professional growth. Each program of instruction includes both professional and academic components.

Admissions Requirements

Unconditional Admission

- Current GRE score of 400 on quantitative and 500 on verbal sections of the GRE
- 3.0 GPA during the last 60 hours of undergraduate coursework and a 3.0 average on all graduate work
- 3 letters of reference on file

Probationary Admission

Applicants who score less than 400 on the quantitative and 500 on the verbal sections of the GRE will be considered for probationary admission on the basis of the following:

- 3.0 GPA during the last 60 hours of undergraduate coursework AND a 3.0 average on all graduate work
- Professionally relevant experience

- Writing sample evaluated by the COEd Graduate Studies Committee. When available, the GRE writing sample will be required for probationary admission.

Terms of Probation upon Acceptance: All students admitted under probation status will be required to earn a 3.0 GPA during the first 12 hours of graduate coursework in the program.

Provisional Admission

An applicant unable to supply all required documentation prior to the admissions deadline, but who otherwise appear to meet admission requirements, may be granted provisional admission.

Deferred Admission

An applicant's admission may be deferred when a file is not complete or when denying admission is not appropriate.

Denied Admission

An applicant may be denied admission if the conditions for unconditional and probationary admission have not been met.

In addition, if a student has been suspended from The University of Texas at Arlington or any other university or program for reasons other than academic reasons, that student may not be admitted or readmitted to an educator preparation program in the College of Education.

Eligibility for Scholarships/Fellowships

To be eligible, candidates must be new students coming to UT Arlington in the fall semester, must have a GPA of 3.0 in their last undergraduate credit hours plus any graduate credit hours as calculated by the Graduate School, and must be enrolled in a minimum of 6 hours of coursework in both long semesters to retain their fellowships.

Distance Learning Options

Many graduate courses in Curriculum and Instruction are offered on campus as well as over the Internet. The complete M.Ed. in Curriculum and Instruction with an emphasis in Literacy Studies is available online as well as the fifteen semester credit hour graduate sequence leading to secondary certification. (See the Graduate Advisor for current course offerings.) For the distance learning option, students enroll in the Internet course and complete all course requirements from the convenience of their home or school computers. Only basic computer competence is necessary (logging on to a Web site, sending and receiving e-mail). Students need a reliable Internet connection and a consistent e-mail address. All assignments are submitted electronically according to an established calendar of deadlines. Students proceed at their own pace in a highly interactive learning environment.

Degree Requirements

Master of Education in Teaching (M.Ed.T.) with Teacher Certification

The Master of Education in Teaching (M.Ed.T.), a 36-hour non-thesis degree, is a unique and specialized degree that enables a student holding a baccalaureate degree to pursue initial teacher certification and use those hours toward requirements of a master's degree. In addition to being accepted into the Graduate School, students must also be admitted into the Teacher Certification program (consult a teacher certification advisor for current admittance requirements). For teacher certification, students must meet state requirements for their teaching field(s) or specialization and complete the graduate-level coursework for early childhood – grade 4, middle level, secondary, or early childhood – grade 4 bilingual certification. They must also fulfill the Residency requirements and pass the appropriate certification exams (consult a teacher certification advisor for current certification information). Up to 18 hours of teacher certification coursework may be applied to the total 36 hours required for completion of the M.Ed.T; however, students must complete teacher certification courses and pass the appropriate certification exams before proceeding to courses that apply to the master's degree. Students may earn teacher certification without completing a master's degree. See the College of Education Web site at **www.uta.edu/coed** for more details on all programs.

Master of Education (M.Ed.)

The Master of Education in Curriculum and Instruction (M.Ed.), a 36-hour non-thesis degree, is a broad-based degree that enables students to pursue academic and professional goals within an individualized program. Following are the two possible master's degree options.

M.Ed. in Curriculum and Instruction

This particular master's degree option is ideal for students desiring a pedagogical foundation in education in addition to an 18-hour concentration of a particular resource area or academic discipline. A common core of 18 hours of graduate education coursework in instructional strategies, curriculum design and research are required. Students also choose from a variety of certifications available through the College of Education to incorporate into their master's degree plan (see the section on Professional Certifications), or they may choose to incorporate up to 18 hours of graduate coursework from disciplines outside of Education. For example, a degree plan for a student who desires TESOL (Teaching English to Speakers of Other Languages) certification would include the required 18 hours of coursework in Education along with the 18 hours of Linguistics coursework from the Program in Linguistics. The Graduate Advisor works with students in creating a degree plan that meets their professional needs and goals. (Note: The Graduate Advisor and graduate faculty must approve all coursework included in a degree plan.) This degree does not require a student to hold a teacher certificate. See the College of Education Web site at **www.uta.edu/coed** for more details on the program.

M.Ed. with an Emphasis in Literacy Studies (available online)

One of the most popular M.Ed. degree plan configurations is the M.Ed. in Curriculum and Instruction with an emphasis in Literacy Studies. In this program, students specialize in advanced coursework designed to meet a variety of professional goals related to literacy. For instance, students may pursue professional certificates including the following.

- **Reading Specialist** is a national certificate recognized by all states. Literacy coaches generally work with teachers to help them with best literacy practices. Reading Specialist is an advanced certificate that certified teachers may add to their existing credential upon completion of two year's teaching experience and a master's degree with at least 27 hours of graduate coursework in literacy. Once recommend-

ed for the Reading Specialist from UT Arlington, students may also apply for the Master Reading Teacher (MRT) certificate without the additional MRT exam.

- **English as a Second Language** is a national certificate. All states have some type of English as a Second Language (ESL) designation. In Texas, ESL is an add-on certificate that individuals with an initial teaching certificate can add to their existing credential with only 12 hours of graduate coursework.

- **Master Reading Teacher** (MRT) is a Texas only certificate. MRTs work in designated schools to tutor struggling readers and may also serve as literacy coaches. The MRT sequence includes 9 graduate hours of coursework. Students who hold the Reading Specialist Certificate can apply for the MRT without additional coursework or the MRT test.

Out of state students seeking certification should go to **http://www.uta.edu/coed/distaneducation/** for information about their certification options.

In addition to these professional certificates, students may choose focused coursework in areas including:

- Writing
- Working with culturally and linguistically diverse students

This program requires 36 credit hours (12 courses). Once students have successfully completed all coursework, they will graduate with a Master of Education in Curriculum and Instruction. In addition, on passing the appropriate TExES tests, students will also have the Reading Specialist Certification, Master Reading Teacher Certification, and/or Supplemental Certification in English as a Second Language. The ESL is a 12-hour, four course program that can be taken as part of this master's degree plan or separately in preparation for the TExES test for supplemental certification in ESL.

This degree option is available online through UT TeleCampus. For more information, please visit **http://www.telecampus.utsystem.edu/index.cfm/4,669,82,56,html.**

Coursework and Completion Requirements

- Coursework that is more than six years old at the time of graduation or teacher/administrator certification program completion cannot be used toward meeting the requirements for a master's degree or graduate-level certification.
- Master's degree and graduate level certification programs must be completed within six years (time in military service excluded) from initial registration in the Graduate School.
- Appropriate state exams and application to the State Board for Educator Certification for a standard certificate must be made within six months of completion of residency/practicum/program. If a candidate allows the six month period to go by without passing all state exams and applying for certification, additional coursework and/or state exams will be required.

Professional-Level Certifications

The Department of Curriculum and Instruction offers graduate-level programs leading to professional certificates. Certifications include Initial Teacher Certification (Early Childhood – Grade 4, Middle Level, Secondary, and All-Level) and the Reading Specialist and Master Reading Teacher Certification, and Master Technology Teacher Certification. Supplemental Certification is available for English as a Second Language (ESL), Bilingual (BIL) and Gifted and Talented. The graduate-level coursework required for these programs may be applied toward a master's degree (M.Ed.T.). The Graduate Advisor works with the student to build an individual degree plan that incorporates one or more of these certification areas. See the College of Education Web site at **www.uta.edu/coed** for more details on these programs.

Initial Teacher Certification

Students holding a baccalaureate degree may pursue initial teacher certification at the graduate level. Students must be admitted to the Graduate School as a master's-degree-seeking student (students may elect to complete certification only) and be admitted to Teacher Certification in the College of Education (see a Teacher Certification advisor for current requirements). Up to 18 hours of graduate-level teacher certification hours may be applied toward an M.Ed.T. Students must also complete the residency/practicum requirements and pass the appropriate TExES exams. Candidates for Teacher Certification must also meet all state requirements for coursework in their teaching field/academic specialization. Note, certification students must be advised and cleared to take teacher certification courses through Teacher Certification Advising. See the College of Education Web site at **www.uta.edu/coed** for more details on the program.

Master Reading Teacher Certificate

This certification focuses on the needs of the multicultural and multilinguistic classrooms of today. To qualify for the Master Reading Teacher (MRT) Certificate, students must complete nine semester credit hours and pass the Master Reading Teacher TExES. Students who complete the requirements for the Reading Specialist certificate and are recommended for that certificate may apply for the MRT as well without taking the MRT exam. See the College of Education Web site at **www.uta.edu/coed** for more details on the program.

Master Technology Teacher (MTT) Certificate

The Master Technology Teacher (MTT) Certification is designed to produce teachers who will work with other teachers and students to increase the use of technology in the classroom. The MTT certification is a master-level certification. Candidates must hold an SBEC Technology Applications or Technology Education Certificate, or have a minimum of three years teaching experience in Texas Schools and have a current Texas teacher's certificate. Candidates must complete the MTT preparation program. Candidates must pass the MTT certification exam. See the College of Education Web site at **www.uta.edu/coed** for more details on the program.

Reading Specialist Certification

Teachers interested in focusing on the important area of reading may pursue the Reading Specialist Certificate, an all-level (K-12) certificate. This unique program focuses on the needs of the multicultural and multilinguistic classrooms of today with the possibility of integrating the requirements for the Master Reading Teacher and the Supplemental Certification for ESL into the total program if desired. To qualify for the Reading Specialist Certificate, students must complete a master's degree, hold a valid Texas teacher certificate, document two years of acceptable classroom teaching experience, and pass the Reading Specialist TExES. Those who already hold a master's degree and who are seeking only the Reading Specialist Certificate are required to complete 27 semester credit hours. See the College

of Education Web site at **www.uta.edu/coed** for more details on the program.

English as a Second Language (ESL)

The English as a Second Language (ESL) certification prepares candidates to teach children from all cultural and language backgrounds (speakers of Spanish, Vietnamese, etc.), and is required for those teachers working with students in grades PK-12 whose first language is not English. (No foreign language background is required for the ESL certificate.) The ESL endorsement may be added to any valid Texas teacher certificate. Students are required to take four required courses in any sequence, complete a practicum in an ESL classroom or one year of successful teaching experience in an ESL or Bilingual Education program approved by the Texas Education Agency, and pass the ESL TExES. (The four courses may be applied toward a master's degree and to the Reading Specialist Certificate.) See the College of Education Web site at **www.uta.edu/coed** for more details on the program.

Bilingual Education (BIL)

Those teachers who are fluent in Spanish and wish to specialize in bilingual education will want to add the Bilingual Endorsement to their initial certification. The required 12 hours of coursework may be incorporated into a master's degree program developed in consultation with the Graduate Advisor and graduate faculty. Students are required to take four courses and provide documentation of one year of successful teaching experience in a bilingual setting approved by the Texas Education Agency. Candidates must also pass the TExES in Bilingual and the TOPT for language proficiency. See the College of Education Web site at www.uta.edu/coed for more details on the program.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Bilingual/ESL/Early Childhood Program (BEEP)

5315. PRACTICUM (3-0). Practicum in student's teaching area(s). This longitudinal experience will help students apply theory and research to practice.

5318. FOUNDATIONS IN BILINGUAL EDUCATION (3-0). Analyzes the development of bilingual education in the United States. Introduces bilingual education program models and discusses research findings on their effectiveness.

5321. ESL METHODS FOR YOUNG LEARNERS (3-0). Compares first and second language acquisition processes and identifies best teaching practices to meet the needs of English language learners. Analyzes elements from Spanish that can affect the acquisition on literacy in English.

5361. LANGUAGE LEARNING: EDUCATIONAL PERSPECTIVES (3-0). Deals with the relationship between first and second language acquisition and literacy, dialect, linguistics, culture; nature and definition of language; overview of linguistic science and language with pedagogical applications.

5362. LITERACY INSTRUCTION IN ESL/BILINGUAL SETTINGS (3-0). Translation of theory into practice stressing various methods and techniques for teaching ESL/bilingual students with emphasis on techniques for oral language development, reading and writing. A comparison/contrast of the various methods, their specifics, and when and how to use them for various instructional objectives as well as the relationship of language development, culture, and conceptual processes to language teaching.

5363. LITERACY DEVELOPMENT IN ENGLISH AND SPANISH (3-0). The development of literacy for bilinguals with specific emphasis on the rationale, methods, and materials for literacy instruction in the home language of the child. A focus on assessing and supplementing first language literacy materials and the successful transition from first language literacy instruction to literacy instruction in English.

5364. LITERACY INSTRUCTION IN SPANISH IN THE CONTENT AREAS (3-0). Content area instruction in the home language of the child along with methods and materials utilized to teach the content areas in the students' first language. Issues of transition from home language instruction in the content areas to English language instruction.

5365. ORGANIZATION AND ADMINISTRATION OF DUAL LANGUAGE PROGRAMS (2-1). Analysis of the research background and implementation of various models of dual language instruction. Insight of the process, data collection, and reporting requirements of the state and federal special populations legislation. This course requires an internship with the office of Federal Programs and/or the office of Bilingual/ESL Education in local school districts. Prerequisite: BEEP 5318.

5366. SPANISH FOR SCHOOL ADMINISTRATORS AND TEACHERS (3-0). Development of Spanish proficiency for teachers and administrators through an immersion approach. Emphasis on concepts and terminology related to education, program administration, community involvement, and communication with Spanish-speaking parents. This course can be repeated.

5391. INDEPENDENT RESEARCH (3-0). Research for course substitution or a topic agreed upon between the student and instructor. May be repeated for credit with permission.

Education (EDUC)

5190. SELECTED TOPICS IN EDUCATION (1-0). An examination of different topics related to education. This seminar may be repeated for credit as the topic changes.

5191. INDEPENDENT RESEARCH (1-0). Research for thesis substitute or equivalent over a topic agreed upon between the student and instructor. May be repeated for credit with permission.

5290. SELECTED TOPICS IN EDUCATION (2-0). An examination of different topics related to education. This seminar may be repeated for credit as the topic changes.

5291. INDEPENDENT RESEARCH (2-0). Research for thesis substitute or equivalent over a topic agreed upon between the student and instructor. May be repeated for credit with permission.

5305. CURRICULUM DESIGN, IMPLEMENTATION, AND EVALUATION (3-0). An examination of theory and research in curriculum development, implementation, and evaluation. Emphasis on current trends in the content areas.

5309. ADVANCED INSTRUCTIONAL STRATEGIES (3-0). A study of advanced models of teaching including concept attainment, inductive thinking, inquiry, case study, role play, take-a-stand, synectics, scamper, simulation games, etc. Research on the effectiveness of the models and classroom demonstration will be required.

5310. DIVERSE POPULATIONS IN TODAY'S SCHOOLS (3-0). An overview of the diverse populations in today's schools. Urban, suburban, and rural school communities and populations will be addressed with special attention to issues of human growth and development, culture, ethnicity, exceptionality, gender, language, religion and socioeconomic status.

5314. EFFECTIVE CLASSROOM INSTRUCTION (3-0). Designed to provide teachers with skills and competencies based on research findings on effective teaching and instruction related to promoting student academic achievement. Includes identifying, developing, and practicing instructional variables that affect teacher performance and student learning tasks.

5315. PRACTICUM (0-3). Practicum in student's teaching area. This longitudinal experience will help students apply theory and research to practice.

5321. EDUCATIONAL RESEARCH (3-0). Examination of basic concepts and procedures necessary for empirical research investigations within classroom contexts, experimental design, data collection and interpretation, and statistical analysis.

5322. EDUCATIONAL RESEARCH AND EVALUATION (3-0). An overview of basic concepts and procedures necessary for analyzing, designing, and conducting quantitative and qualitative educational studies. A focus on educational research, including empirical research, investigations data collection and interpretation, and statistical analysis. Also, a focus on educational evaluation including accreditation, personnel appraisal, and educational programs and materials.

5329. CLASSROOM MANAGEMENT AND DISCIPLINE (3-0). Analysis of the variables that affect teacher and student behavior in the classroom. Survey of effective strategies of classroom management and discipline based on contemporary research. Particular attention to individual student differences in settings such as gifted and talented, handicapped, and learning disabled.

5330. LEADERSHIP IN THE INSTRUCTIONAL SETTING (3-0). Examination of current research on effective instructional organizations and classroom instruction in today's schools, on characteristics of school leadership, and on the role and function of the teacher as instructional leader. Topics include the essential components of instruction, developing instructional-management systems, evaluating student and teacher performance, assisting colleagues to monitor and improve instructional skills, school climate and leadership styles as they impact on school improvement.

5358. THEMATIC SCIENCE FOR ELEMENTARY AND SECONDARY TEACHERS (3-0). Professional development program for elementary and secondary science teachers who will examine a variety of instructional strategies. The course will provide a broad spectrum of content from all areas of science and provide opportunities to participate in investigations, field trips and seminars. The course will facilitate the implementation of a thematic science curriculum in elementary and secondary schools through research-based practices.

5359. ENVIRONMENTAL SCIENCE FOR ELEMENTARY AND SECONDARY TEACHERS (2-2). Designed for elementary, middle and high school teachers who will examine a variety of environmental education issues and instructional strategies for classroom and outdoor settings. The course will provide a broad spectrum of content from all areas of science and will provide opportunities to participate in field trips, science investigations and seminar sessions. It will facilitate the implementation of an environmentally based curriculum in schools using best practices.

5370. INTRODUCTION TO GIFTED AND TALENTED CHILDREN (3-0). Psychological characteristics of gifted and talented children. Introduction to identification techniques, educational programs, instructional approaches, and special problems.

5371. MEASUREMENT AND ASSESSMENT OF GIFTED AND TALENTED CHILDREN (3-0). Tests, formal and informal measures, and systems for identification and selection of the gifted and talented student. Basic test construction theory, test interpretation, and test uses.

5372. METHODS, MATERIALS, AND CURRICULUM FOR THE GIFTED AND TALENTED (3-0). Curriculum theory and curriculum design for the gifted student. Methodology for implementing practical and theoretical objectives for gifted instruction.

5373. CREATIVITY: THEORIES, MODELS, AND APPLICATION (3-0). The concept of and current research on creativity, the nature and assessment of creative thinking, as well as methods of fostering creativity.

5374. PRACTICUM (1-5). Participation in a gifted and talented setting supervised by a university and/or school district representative. A wide range of practical experiences will be emphasized. Graded P/F/R.

5380. DIVERSITY IN EDUCATIONAL SETTINGS (3-0). Effective leadership, instruction, and management strategies for work in diverse educational settings. Designed to provide increased self-awareness and insight into issues of diversity such as culture, ethnicity, exceptionality, gender, language, religion, and socioeconomic status. Demographic issues along with urban and suburban educational settings will also be addressed.

5390. SELECTED TOPICS IN EDUCATION (3-0). An examination of different topics related to education. This seminar may be repeated for credit as the topic changes.

5391. INDEPENDENT RESEARCH (3-0). Research for thesis substitute or equivalent over a topic agreed upon between the student and instructor. May be repeated for credit with permission.

5394. UNDERSTANDING CLASSROOM RESEARCH (3-0). In this course, students gain an understanding of educational research and critically analyze resources of research, such as professional journals, Internet sites, technical reports, ERIC (Education Resources Information Center) documents, and reports of professional organizations. The students will examine historical trends and themes in education and how they have changed and progressed to newer, cutting-edge educational research that informs classroom instruction. Students will analyze research data and reports of research with the purposes of, gaining under-

standing of sound educational research techniques; evaluating research designs including issues of validity and reliability; gaining knowledge of both quantitative and qualitative data collection procedures; interpreting the results and implications of research; and learning the form of technical, scholarly writing. Through course experiences, students will be prepared to write meaningful research questions and design methodologies for conducting their own classroom research projects. Students will also learn to be effective consumers of research, equipped with skills needed to make sense of classroom, district, state, national, and international educational research studies. This course is to be taken after at least 9 hours of graduate course work and preceding EDUC 5395 and EDUC 5397.

5395. THE RESEARCH PROCESS (3-0). An overview of the educational research process with emphasis on research paradigms using a scientific approach to developing research questions and selecting methods of data collection and analysis for planning and writing research studies. Graded A,B,C,D,F,P,W. Prerequisite: This course should be taken in the first twelve hours of a student's program.

5397. IMPLEMENTING AND DISSEMINATING CLASSROOM RESEARCH (3-0). In this course, students will implement the classroom research designed and written in EDUC 5395, collect data from this research, and interpret results. Students will prepare a final, written research report that presents the investigation and its results in a 5-chapter professional format, such as would be prepared as a paper for presentation at a professional conference and/or publication in an educational journal. At the conclusion of this course, students will submit a copy of their research project report to the course instructor and present the completed project as their final Capstone Experience for the masters degree in education. Prerequisites: EDUC 5394 and EDUC 5395. This course is to be taken in the final semester of the M.Ed. and in the semester immediately following EDUC 5395.

Early Childhood Education (ECED)

5190. SELECTED TOPICS IN EARLY CHILDHOOD EDUCATION (1-0). An examination of different topics related to early childhood education. This course may be repeated for credit with permission.

5191. INDEPENDENT RESEARCH (1-0). Research over a topic agreed upon between the student and instructor. May be repeated for credit with permission.

5290. SELECTED TOPICS IN EARLY CHILDHOOD EDUCATION (2-0). An examination of different topics related to early childhood education. This course may be repeated for credit with permission.

5291. INDEPENDENT RESEARCH (2-0). Research over a topic agreed upon between the student and instructor. May be repeated for credit with permission.

5309. TRENDS AND ISSUES IN EARLY CHILDHOOD EDUCATION (3-0). In-depth analysis of current research on issues in Early Childhood Education. Emphasis on the evaluation and impact of historical, political, and social policy; overview of legislation and advocacy on behalf of young children.

5315. PRACTICUM (3-0). Practicum in student's teaching area(s). This longitudinal experience will help students apply theory and research to practice.

5317. THEORIES OF DEVELOPMENT AND LEARNING IN EARLY CHILDHOOD EDUCATION (3-0). Human growth and development, including developmental anomalies, from birth through early childhood with emphasis on cognitive, social, emotional, and physical growth. Attention is given to current research regarding establishment of learning environments that foster development of the child's self-concept, cognitive competencies, oral language and literacy development, and positive social behaviors including tolerance of diversity among individuals and groups. (May be taken prior to or with ECED 4310, READ 4373 and EDTC 5300).

5318. PROGRAMS AND PRACTICES IN EARLY CHILDHOOD EDUCATION (3-0). An overview of the historical and philosophical influences of early education and the current research perspectives on fostering educational environments conducive to development of the whole child. Attention is given to organization and implementation of a developmentally appropriate curriculum in EC-4 and formulating programs which extend and integrate learning experiences of young children, including the home-school relationship.

5319. EARLY EDUCATION: INSTRUCTIONAL STRATEGIES I (3-0). Study of principles of integration of content in EC-4 classrooms with focus on mathematics and science concepts and cognitive development. Emphasis on developing dispositions promoting scientific investigation and appropriate objects, materials, activities, and programs to assist in assimilation of mathematics and science concepts.

5320. EARLY EDUCATION: INSTRUCTIONAL STRATEGIES II (3-0). Study of principles of integration of content in EC-4 classrooms with focus on social studies and the creative arts and cognitive development. Emphasis on developing dispositions promoting developing self, awareness of others, and group dynamics involved in the socialization process in a diverse community. Strategies for enhancing creative and risk-taking characteristics in EC-4 classrooms.

5321. LANGUAGE AND LITERACY DEVELOPMENT: THE EARLY YEARS (3-0). Examine relationship between listening, talking, reading and writing. Focus on oral and non-verbal communication skills in native and second language development. Consider theories of early speaking, reading and writing in young children, with focus on the relationship between the use of children's literature and social and cognitive development.

5390. SELECTED TOPICS IN EARLY CHILDHOOD EDUCATION (3-0). An examination of different topics related to early childhood education. This course may be repeated for credit with permission.

5391. INDEPENDENT RESEARCH (3-0). Research over a topic agreed upon between the student and instructor. May be repeated for credit with permission.

Educational Technology (EDTC)

5190. SELECTED TOPICS IN EDUCATION (3-0). An examination of different topics related to education. This seminar may be repeated for credit as the topic changes.

5191. INDEPENDENT RESEARCH (3-0). Research for thesis substitute or equivalent over topic agreed upon between student and instructor. May be repeated for credit with permission.

5290. SELECTED TOPICS IN EDUCATION (3-0). An examination of different topics related to education. This seminar may be repeated for credit as the topic changes.

5291. INDEPENDENT RESEARCH (2-0). Research for thesis substitute or equivalent over topic agreed upon between student and instructor. Can be repeated for credit with permission.

5300. INTRODUCTION TO FOUNDATION OF EDUCATION INSTRUCTIONAL DESIGN AND TECHNOLOGY (3-0). Analysis of integrating TEKS, computers and related technologies in education. Topics include issues and concerns prior to integration, use of software in teaching and learning, identifying resources and strategies for use of the World Wide Web, and creating instructional activities into and across curriculum.

5301. CURRENT APPLICATIONS OF TECHNOLOGY IN EDU-

CATION (3-0). Study of technology use in educational environments. Topics include: instructional, learning, assessment, and management applications; a review of current research on selection, evaluation, and integration of appropriate media; and computer hardware and software, multimedia, laser disk, CD-ROM, and telecommunications systems.

5302. INTERNET IN EDUCATION (3-0). Course to aid educators and training professionals in developing robust techniques for locating and utilizing Internet resources in their day-to-day activities. Selected exercises from representative categories of tools such as: Telnet, FTP, Gopher, and WWW.

5310. COMPUTER APPLICATIONS IN CURRICULUM AND INSTRUCTION (3-0). Designed for both elementary and secondary teachers; skills and methods necessary to implement computer applications within the curriculum. Methods for managing the computer in the classroom, courseware telecommunications within the curriculum.

5320. WEB AUTHORING (3-0). Study of Web site planning, development and HTML tagging. Topics include: storyboards, content creation, Web site tagging with browser independent tags, use of color and fonts to communicate concepts, interactivity by design, ethical use of and respect for intellectual property, understand copyright, fair use, patent, and trademarks, the Master Technology Teacher Standards (EC-12) and the Standards for Basic Endorsement in Educational Computing and Technology Literacy.

5330. DESKTOP PUBLISHING (3-0). Study of desktop publishing planning, development, and production. Topics include: desktop publishing terminology, basic design theory, principles of form and design, guidelines for desktop publishing, ethical use of and respect for intellectual property, understand copyright, fair use, patent, and trademarks, the Master Technology Teacher Standards (EC-12) and the Standards for Basic Endorsement in Educational Computing and Technology Literacy.

5340. MULTIMEDIA (3-0). Study of multimedia planning, development, and implementation that maximize the use of technology, student learning, and teacher effectiveness. Topics include: methodologies for tutorials, hypermedia, drills, simulations, educational games, open-ended learning environments, testing, Web-based learning, interactivity by design, ethical use of and respect for intellectual property, understand copyright, fair use, patent, and trademarks, the Master Technology Teacher Standards (EC-12) and the Standards for Basic Endorsement in Educational Computing and Technology Literacy.

5390. SELECTED TOPICS IN EDUCATION (3-0). An examination of different topics related to education. This seminar may be repeated for credit as the topic changes.

5391. INDEPENDENT RESEARCH (3-0). Research for thesis substitute or equivalent over topic agreed upon between student and instructor. May be repeated for credit with permission.

Middle Level (EDML)

5302. SCIENCE IN THE MIDDLE GRADES (3-0). The examination of instructional strategies, materials, current research, and technology pertinent to teaching science in the middle grades; the scope and sequence of science content and implementation of instructional approaches to accommodate diverse student populations.

5303. MATHEMATICS IN THE MIDDLE GRADES (3-0). The examination of instructional strategies, materials, current research, and technology pertinent to teaching mathematics in the middle grades; the scope and sequence of math content and the selection and implementation of instructional approaches to accommodate diverse student populations.

5304. SOCIAL STUDIES IN THE MIDDLE GRADES (3-0). An examination of content, methods, current research, and learning theory appropriate for social studies education in the middle grades. Special attention to methods that promote analytical and evaluative abilities necessary for participatory democracy in a culturally diverse society.

5308. MIDDLE GRADES ORGANIZATION, INSTRUCTION, AND MANAGEMENT (3-0). The examination of principles, theories, and research related to developmentally responsive middle level programs, effective instruction and effective strategies of classroom management. Attention is given to the employment of a variety of approaches for developing an appropriate climate to meet the varying needs of the middle level student.

5315. PRACTICUM (3-0). Practicum in student's teaching area(s). This longitudinal experience will help students apply theory and research to practice.

5328. PREADOLESCENT/ADOLESCENT GROWTH, DEVELOPMENT, AND LEARNING THEORY (3-0). Physical, social, emotional, and cognitive growth patterns of 10- to 15-year-old children, emphasizing familial, cultural, societal, and genetic determinants of behavior. Attention is given to current research regarding the developmental characteristics of adolescents, including exceptional learners and students with special needs.

5391. INDEPENDENT RESEARCH (3-0). Research for thesis substitute or equivalent over a topic agreed upon between the student and instructor. May be repeated for credit with permission.

Literacy Studies (LIST)

5191. INDEPENDENT RESEARCH IN READING (1-0). Individual or small group research project on a literacy-related topic agreed upon between student(s) and instructor. May be repeated for credit with permission.

5291. INDEPENDENT RESEARCH IN READING (2-0). Individual or small group research project on a literacy-related topic agreed upon between student(s) and instructor. May be repeated for credit with permission.

5316. LITERACY PRACTICUM I (1-5). This practicum is intended for entering in the M.Ed. with Literacy Emphasis who plan to teach reading and writing and become literacy coaches/certified Reading Specialists in K-12 schools. The course introduces the national Reading Specialist Standards and offers an overview of the program. The course combines an introduction to the theory, research, and knowledge in the field of literacy with application through field experiences in schools and classrooms. Students begin their program portfolio focused on the national Reading Specialist Standards. Graded F,P,W. Prerequisite: This course should be taken in the first or second semester of a student's program.

5317. LITERACY PRACTICUM II (1-5). This practicum is intended as the capstone experience for students in the M.Ed. with Literacy Emphasis who plan to teach reading and writing and become literacy coaches/certified Reading Specialists in K-12 schools. The course provides an opportunity to synthesize the theory and research related to literacy that has been presented in the program, to explore literacy program development and the implementation of technology in literacy programs, and to participate in professional leadership options. Students apply theory/research through field experiences in a professional setting. Students must complete their program port-

folio focused on the national Reading Specialist Standards. Graded A,B,C,D,F,P,W. Prerequisite: LIST 5316 and at least 8 additional courses in the M.Ed. with Literacy Emphasis.

5325. CURRENT TRENDS IN READING AND LANGUAGE ARTS (3-0). Relationships between theory and practice in the field of reading and language arts at the elementary and secondary level. Emphasis on current trends and issues such as the teaching of word identification, vocabulary, comprehension, spelling and writing. The use of thematic teaching and integrated instruction also will be explored.

5326. TEACHING THE LANGUAGE ARTS IN SECONDARY SCHOOLS (3-0). Teaching of the processes and skills for reading/language arts (grades 7 through 12). Topics include teaching the reading and writing process, children's and adolescent literature, poetry, drama, listening/speaking, and media.

5345. CONTENT AREA READING AND WRITING (3-0). Explores methods of teaching reading, writing, and study skills in content area subjects. Emphasis on text structure and the difference between narrative and expository text, graphic organizers for text structure, the reading/writing process as applied to informational text. Classroom adaptations for culturally and linguistically diverse populations in the content areas also will be addressed.

5346. TEACHING THE WRITING PROCESS (3-0). Current research and theory on the writing process, how children develop as writers, the teacher's role, the learning environment, and motivation, assessment, and evaluation in writing.

5350. LITERACY ASSESSMENT (3-0). Assessment and diagnosis, both formal and informal, of reading and language arts learning.

5353. LITERATURE FOR CHILDREN AND YOUNG ADULTS (3-0). Selection, evaluation, and use of current literature published for children and young adults.

5354. MULTICULTURAL LITERATURE FOR CHILDREN (3-0). Study of literature for children and young adults which reflects the culture and experiences of African-Americans, Asian-Americans, Mexican-Americans, and Native Americans, among others. Consideration of selection guidelines, evaluation of literary quality as well as cultural authenticity and teaching applications, including adaptations for culturally and linguistically diverse populations.

5361. LANGUAGE LEARNING: EDUCATIONAL PERSPECTIVES (3-0). Deals with the relationship between first and second language acquisition and literacy, dialect, linguistics, culture; nature and definition of language; overview of linguistic science and language with pedagogical applications.

5362. LITERACY INSTRUCTION IN ESL/BILINGUAL SETTINGS (3-0). Translation of theory into practice stressing various methods and techniques for teaching ESL/bilingual students with emphasis on techniques for oral language development, reading and writing. A comparison/contrast of the various methods, their specifics, and when and how to use them for various instructional objectives as well as the relationship of language development, culture, and conceptual processes to language teaching.

5373. FOUNDATIONS OF LITERACY LEARNING IN THE PRIMARY GRADES (3-0). Balanced literacy approach to literacy instruction in the primary grades (K-4) with an emphasis on reading and writing including the critical areas of: phonics, phonemic awareness, word study, fluency, and comprehension. In addition, the course examines various theoretical models of reading along with the principles of teaching reading and writing using a variety of instructional strategies, effective program organization, assessment, and classroom management. Graded A,B,C,D,F,P,W.

5381. NATIONAL WRITING PROJECT PART I (3-0). An intensive institute in which teachers learn ways to improve student writing abilities by improving their own teaching and learning of writing. Students participate in an intensive literature review related to the area of writing instruction. Graded A,B,C,D,F,W. Prerequisite: Students must apply and be invited to participate in this course. Concurrent enrollment in LIST 5382.

5382. NATIONAL WRITING PROJECT PART II (3-0). An intensive institute in which teachers learn ways to improve student writing abilities by improving their own teaching and learning of writing. For this part of the workshop, students build on their literature review by writing a research proposal and developing research-based writing instruction. In addition, professional development training for classroom teachers is provided. Graded A,B,C,D,F,P,W. Prerequisite: Students must apply and be invited to participate in this course. Concurrent enrollment in LIST 5381.

5383. WRITING FOR PROFESSIONAL PUBLICATION (3-0). This course focuses instructor and peer interaction as students conduct literacy-related research, analyze data, write up the results, and disseminate their completed study to a professional journal. A comprehensive study of professional journals and their requirements for submission is included in this course. Graded A,C,D,F,P,W. Prerequisite: LIST 5385 or program advisor approval.

5384. ADVANCED PEDAGOGY OF WRITING (3-0). This course focuses on strategies for teaching prewriting, drafting, revising, editing, and publishing through writing workshop, literature focus units, and thematic units as well as through the content areas. Both writing assessment with rubrics and evaluation with portfolios are studied. Students compose both expository and expressive pieces as well as design and micro teach mini lessons and a web-based integrated writing unit. Graded A,B,C,D,F,P,W. Prerequisite: LIST 5346 or LIST 5381 and LIST 5382

5385. LITERACY RESEARCH (3-0). An exploration of the research process with emphasis on literacy research. Includes an examination of various research designs related to language and literacy development including both quantitative and qualitative models such as case studies, interview, or observational. Leads students through the process of developing research questions, selecting methods of data collection, interpretation and analysis of data, and writing research studies. Graded A,B,C,D,F,P,W. Prerequisite: This course should be taken in the first twelve hours of a student's program.

5390. SELECTED TOPICS IN READING (3-0). An examination of different topics each semester, with a focus on subjects related to reading, writing, oral language, and literacy.

5391. INDEPENDENT RESEARCH IN READING (3-0). Individual or small group research project on a literacy-related topic agreed upon between student(s) and instructor. May be repeated for credit with permission.

Department of Educational Leadership and Policy Studies

www.uta.edu/coed/educleadership/

Degrees and Certificates

Probationary Principal Certificate
Principal Certification
Superintendent Certification
Master of Education (M.Ed.)
Doctor of Philosophy (Ph.D.)

Master's Degree Plans

Non-Thesis

Chair

Adrienne Hyle
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Graduate Faculty

Professors

Funkhouser, Gerlach, Hyle

Associate Professors

Ausbrooks, Hardy, Schoon, Stader

Assistant Professors

Basham, Davis, Graca, Kallison, Muñoz

Clinical

Johnson, Neely

Admissions Requirements - Master's Program

Unconditional Admission

- 2 of 3 current GRE minimum score conditions
  - verbal score of 500 (not less than 400)
  - quantitative score of 500 (not less than 400)
  - analytical writing score of 4.0
- 3.0 GPA during the last 60 hours of undergraduate coursework AND a 3.0 average on all graduate work
- 3 letters of reference on file

Probationary Admission

Applicants failing to meet the unconditional admission GRE criteria or having a GPA less than 3.0 may be considered for probationary admission in which case the following criteria will also be considered by the Graduate Studies Committee:

- Professionally relevant experience
- Writing sample

Terms of Probation upon Acceptance: All students admitted under probation status will be required to earn a 3.5 GPA during the first 12 hours of graduate coursework in the program.

Provisional Admission

An applicant unable to supply all required documentation prior to the admissions deadline, but whom otherwise appears to meet admissions requirements may be granted provisional admission.

Deferred Admission

An applicant's admission may be deferred when a file is not complete or when denying admission is not appropriate.

Denied Admission

An applicant may be denied admission if the conditions for unconditional and probationary admission have not been met.

In addition, if a student has been suspended from The University of Texas at Arlington or any other university or program for reasons other than academic reasons, that student may not be admitted or readmitted to an educator preparation program in the College of Education.

Programs

The Department of Educational Leadership and Policy Studies currently offers the Master of Education (M.Ed.) in Educational Administration. Coursework for the Principalship certification is built into the master's degree plan of 39 hours. Candidates are required to pass the state certification exam to be recommended for Principal Certification. Candidates must submit an official Texas Teacher Service Record with at least 2 full years of credible teaching experience as a classroom teacher. The candidate's school district must send an official Texas Service Record to the Director of Certification in the UT Arlington College of Education. The Department of Educational Leadership and Policy Studies offers two routes to Principal Certification with a master's degree: a campus-based approach, and several cohort-based programs such as the, Scholars of Practice, Educational Leadership UT Arlington and the Urban Collaborative for Educational Leadership. Some cohort options are open only to those candidates who are selected by their districts to participate.

With the assistance of the Graduate Advisor and/or Graduate Staff Advisor, candidates are required to complete a tentative program of work prior to completing 12 hours of graduate work. This program of work is filed in the Graduate School and may be modified as needed. Candidates for master's degrees are required to submit a final program of work during their final semester of coursework for the degree. For candidates who already have a master's degree, a 24 hour option is provided for the Principal Certification. A passing score on the state principal certification exam is required as well as the documented two years of classroom teaching.

Superintendent Certification

Educational Leadership and Policy Studies offers coursework and field experiences leading to Superintendent Certification. Upon completion of superintendency coursework, a passing score on the Superintendent Examination for the Certification of Educators in Texas (TExES), and evidence of Principal or equivalent certification, candidates will be recommended to the State Board for Educator Certification (SBEC) for issuance of the certificate. Currently courses are offered in a cohort format beginning each Fall and concluded in the following Summer.

Required EDAD courses for Superintendent Certification
5170, 5279, 5371, 5373, 5374, and 5378.

Principal Certification

A candidate who has completed (grades posted) all requirements (EDAD, 5381, 5382, 5383, 5384) and is enrolled in 5389 internship or 5399 Capstone Internship may apply for the Principal Certificate. In order for UT Arlington to recommend a candidate for the Principal Certificate, the candidate must have a district administrative /internship employment assignment. The Principal Certificate issued by the state is valid from one year from the date of issuance, renewable annually for 2 consecutive years for a maximum of 3 years total.

Principal certification candidates on a Principal Certificate must maintain continual enrollment in the Educational Leadership and Policy Studies department by taking EDAD 5389 or an equivalent course approved by the ELPS faculty graduate advisor. This applies to all of the three years allowed for certificates.

For more information on how to apply, contact the College of Education Certification Office. Applying to the state for the certificate must be done online at SBEC **http://www.sbec.state.tx.us/**

Principal Certification

Applicants who have earned master's degrees from accredited institutions and are only interested in Principal Certification will be required to complete 24 semester credit hours of EDAD coursework and internships. An applicant must hold a valid Texas Teacher Certificate, have a copy of their teaching service record showing a minimum of two creditable years of teaching experience, be admitted to the Principal Preparation program and complete a certification plan with the Graduate Advisor.

Required EDAD Courses for Principal Certification
5330, 5381, 5382, 5383, 5384, 5389, 5399, and one additional course from 5322, 5376, 5377, 5380, 5388, 5395, or other course approved by the graduate advisor and department chair.

Master of Education with Principal Certification

Requirements

Foundations - 6 credit hours
EDAD 5382. Foundations of Educational Administration
EDAD 5380. Diversity in Educational Settings

Research - 3 credit hours
EDAD 5322. Educational Research and Evaluation

Technology - 3 credit hours
EDTC 53__ or equivalent

Instructional Leadership / Curriculum & Instruction – General: 6 credit hours from the following selected or by advisement:
EDAD 5330. Leadership in the Instructional Setting (required but can be waived with approved Instructional Leadership Development / ILD Certification). If waived, 5305 or 5309 must be taken.
EDUC/EDAD 5309. Advanced Instructional Strategies
EDUC/EDAD 5305. Curriculum Design, Implementation and Evaluation

Administrative Leadership - 9 credit hours
EDAD 5381. Political and Legal Aspects of Education
EDAD 5383. The Principalship
EDAD 5384. Resource Management in Education

Policy Studies - 6 credit hours
EDAD 5376. Educational Governance
EDAD 5388. Educational Policy Issues in the Public Schools
EDAD 5395. Futuristic Leadership Roles in School Administration
EDAD 5377. Contemporary Issues in Education

Internship and Capstone Courses - 6 credit hours
EDAD 5389. Administrative Internship (taken in the candidate's first long semester)
EDAD 5399. Capstone Internship in Educational Administration (this course is taken during the last Fall or Spring semester of the program)

Electives
Additional courses selected or by advisement to reach 39 credit hours minimum for degree.

Degree Total (minimum): 39 credit hours
Refer to Department Guidebook or advisors for sequence of courses.

Superintendent Certification

Requirements

Core Courses - 12 credit hours
EDAD 5373. The Superintendency
EDAD 5371. Administration of Staff, Personnel, and Advanced School Law
EDAD 5378. Curriculum and Program Assessment
EDAD 5374. Advanced School Business Administration

Internship Courses - 3 credit hours
EDAD 5279. Superintendent Internship I
EDAD 5170. Superintendent Internship II

Certification Total: 15 credit hours
Refer to Department Guidebook or advisors for sequence of courses.

Degree Requirements

The Department of Educational Leadership and Policy Studies offers two routes to earn the Master of Education in Educational Administration (M.Ed.) and Principalship Certification: the self-paced program, and several cohort programs (i.e. groups of candidates following the same sequence of courses). The Department also offers courses for candidates seeking Superintendent Certification.

Coursework and Completion Requirements

- Coursework that is more than six years old at the time of graduation or teacher/administrator certification program completion cannot be used toward meeting the requirements for a master's degree or graduate-level certification.
- Master's degree and graduate level certification programs must be completed within six years (time in military service excluded) from initial registration in the Graduate School.
- Appropriate state exams and application to the State Board for Educator Certification for a standard certificate must be made within six months of completion of residency/practicum/program. If a candidate allows the six month period to go by without passing all state exams and applying for certification, additional coursework and/or state exams will be required.

Doctor of Philosophy (Ph.D.) in K-16 Educational Leadership and Policy

The Ph.D. degree is designed for candidates who seek to enter careers in research, institutional assessment, policy analysis, institutional leadership, or the professoriate. The program challenges the conventional wisdom that higher education and K-12 education are different worlds, by bringing together scholars and students from all levels of education to work and study together. Particularly, the program will focus on narrowing achievement gaps by studying and creating more efficacious transitions within the educational experience. Working from the premise that all people can learn at high levels, the program will study the systemic barriers at all levels of education that prevent so many children, adolescents, and young adults from being as successful as they can possibly be.

In addition to becoming experts in their particular area of inquiry, graduates will have a broad foundation in the study of educational leadership and policy at all levels. Students in the Ph.D. program will be part of a cohort throughout their coursework.

Admission Requirements – Ph.D. Program

A select number of qualified applicants are admitted each year to the "cohort- based" program. Each cohort begins coursework during the first summer session. Specific guidelines for applying to this program are found on the departmental Web site. Admission into this program is very competitive. The departmental admissions committee considers prior educational experiences, prior work experiences, GRE scores, and professional references. Finalists are invited to campus to interview with the committee and participate in a writing ability assessment.

In addition to the general Graduate School admission requirements, applicants must meet the following requirements for unconditional admission.

- Master's degree in education or other field appropriate for the doctorate in Educational Leadership and Policy Studies.
- Grade point minimum average of 3.5 out of a possible 4.0 from the master's degree.
- Successful applicants for unconditional admission are expected to present a minimum of two of the following three Graduate Record Examination (GRE) scores: (1) verbal minimum score of 500, (2) quantitative minimum score of 500, (3) written analytical minimum score of 4.
- Applicants who do not meet the minimum score requirement for a standardized test will be considered for probationary admission status when other factors are taken into account in a holistic review.
- A minimum score of 550 on the Test of English As a Foreign Language (TOEFL) for applicants whose native language is not English
- At least three years of documented experience in a work environment in which the primary professional responsibility at any level has been education (e.g., teaching, administration, curriculum development, professional development, post secondary education, government or private industry settings).
- Admissions is very competitive. Meeting admission standards does not guarantee admission to the program.

Required Courses (51 hours)

1. **Research Methods Core (12 hours)**
   EDAD 6304. K-16 Quantitative Research Design & Methodology
   EDAD 6308. K-16 Qualitative Research Design & Methodology
   EDAD 6310. Statistical Methods
   EDAD 6315. Advanced Statistical Methods

2. **Policy Research Core (12 hours)**
   EDAD 6320. K-16 Philosophy & History Policy Research
   EDAD 6325. K-16 Finance Policy Research
   EDAD 6330. K-16 Legal Policy Research
   EDAD 6335. K-16 Institutional Effectiveness Policy Research

3. **Leadership Research Core (12 hours)**
   EDAD 6340. K-16 Organizational Leadership Research
   EDAD 6345. K-16 Human Resources Leadership Research
   EDAD 6350. K-16 Curriculum Leadership Research
   EDAD 6355. K-16 Student Services Leadership Research

4. **Research Internships (6 hours)**
   EDAD 6380. K-16 Internship in Policy Research
   EDAD 6385. K-16 Internship in Leadership Research

5. **Comprehensive Examination (0 hours)**
   EDAD 6098. K-16 Comprehensive Examination

6. **Dissertation (9 semester credit hours minimum) selected from:**
   EDAD 6399. K-16 Dissertation
   EDAD 6699. K-16 Dissertation

Elective Courses (15 hours)

1. **Topical Courses (3 hours)**
   EDAD 6390. Selected Topics in K-16 Educational Leadership Research
   or
   EDAD 6392. Selected Topics in K-16 Educational Policy Research

2. **Approved Electives (12 hours)**

Written and Oral Comprehensive Examinations

In order to be elevated to candidacy for the Ph.D., students must successfully pass written and oral comprehensive examinations.

Dissertation

Students elevated to candidacy for the Ph.D. and may register for the dissertation. The dissertation is the culmination of the Ph.D. program and represents a distinct contribution to the field of knowledge. A dissertation defense is required.

Doctor of Philosophy in Public and Urban Administration with Educational Leadership Emphasis

The Ph.D. in Public and Urban Administration with an emphasis in educational leadership and policy studies prepares candidates for key administrative positions in educational institutions, for upper-level management positions in public- and nonprofit-sector organizations and for teaching and research positions in institutions of higher education. The School of Public and Urban Affairs (SUPA) and the Department of Educational Leadership and Policy Studies, College of Education (COEd), teach the program jointly. Interested students should first contact the SUPA Ph.D. Advisor at 817.272.3071, Fax 817.272.5008 or E-mail: lgordon@uta.edu. Visit **www.uta.edu/supa** for more information.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Educational Administration (EDAD)

Course fee information is published in the online Student Schedule of Classes. Please refer to **www.uta.edu/schedule** for a detailed listing of specific course fees.

5179. SUPERINTENDENCY INTERNSHIP (0-1). Provides experiences in the various roles and responsibilities of a superintendent of schools under the direction of a school district mentor and a university supervisor. An internship project will be developed in consultation with public school and university personnel.

5190. SELECTED TOPICS IN EDUCATION (1-0). An examination of different topics related to education. This seminar may be repeated for credit as the topic changes.

5191. INDEPENDENT RESEARCH (1-0). Research for thesis substitute or equivalent over topic agreed upon between student and instructor. Can be repeated for credit with permission.

5199. PROBATIONARY CERTIFICATION INTERNSHIP (1-0). This course provides mentoring and supervision to UTA Educational Leadership and Policy Studies students employed as assistant principals or principals while on a Probationary Certificate and not enrolled in either EDAD 5389 or EDAD 5399. Individuals must reenroll in EDAD 5199 while on probation, which is initially issued for one calendar year.

5279. SUPERINTENDENCY INTERNSHIP (0-2). Provides experiences in the various roles and responsibilities of a superintendent of schools under the direction of a school district mentor and a university supervisor. An internship project will be developed in consultation with public school and university personnel.

5290. SELECTED TOPICS IN EDUCATION (2-0). An examination of different topics related to education. This seminar may be repeated for credit as the topic changes.

5291. INDEPENDENT RESEARCH (2-0). Research for thesis substitute or equivalent over topic agreed upon between student and instructor. Can be repeated for credit with permission.

5302. EDUCATIONAL TECHNOLOGY PLANNING (3-0). This course is designed to help prepare future educational administrators in assessing, revising, or developing a technology plan for their school, district, or campus. Students will explore the overall concepts of technology, new applications of technology, and how they apply to educational standards, such as the National Educational Technology Standards for Teachers (NETS-T) and the Technology Standards for School Administrators (TSSA).

5305. CURRICULUM DESIGN, IMPLEMENTATION, AND EVALUATION (3-0). An examination of theory and research in curriculum development, implementation, and evaluation. Emphasis on current trends in the content areas.

5309. ADVANCED INSTRUCTIONAL STRATEGIES (3-0). A study of advanced models of teaching, including concept attainment, inductive thinking, inquiry, cognitive growth, non-directive group investigation, laboratory training, simulation and the training model. Research in teacher effectiveness and demonstration of various models will be required.

5315. RESEARCH PRACTICUM (3-0). Examination of basic concepts and procedures necessary for empirical research investigations within classroom contexts, experimental design, data collection and interpretation, and statistical analysis.

5321. EDUCATIONAL RESEARCH (3-0).

5322. EDUCATIONAL RESEARCH AND EVALUATION (3-0). An overview of basic concepts and procedures necessary for analyzing, designing, and conducting quantitative and qualitative educational studies. Topics include familiarization with educational journals, associations, funding agencies, accreditation procedures, program evaluation, sampling procedures, data collection, and statistical analyses.

5330. LEADERSHIP IN THE INSTRUCTIONAL SETTING (3-0). Examination of current research on effective instructional organizations and classroom instruction in today's schools, on characteristics of school leadership, and on the role and function of the teacher as instructional leader. Topics include the essential components of instruction, developing instructional-management systems, evaluating student and teacher performance, assisting colleagues to monitor and improve instructional skills, school climate and leadership styles as they impact on school improvement.

5351. STUDENT AFFAIRS (3-0). The emphasis of this course is on administration of student services and support for student develop-

ment, which may include exploring the purposes, structure, program evaluation, and budgeting function involved in student affairs.

5352. HIGHER EDUCATION LAW (3-0). The purpose of this course is to provide students with the fundamental cases of higher education law for administrators. Topics of this course may include the legal structure of higher education, separation of church and state, religion, academic freedom, employment and tenure, due process, computer-related legal issues, copyright, students' rights of speech and expression, search and seizure, desegregation, tort liability, contracts and collective bargaining.

5353. HIGHER EDUCATION FINANCE (3-0). This course will provide knowledge of the theoretical basis for use of tax funds for education, student fees and tuition, state methods for financing, planning, cost benefit, budgeting, federal role, capital outlay, and the relationships between educational objectives and resource allocations.

5354. THE AMERICAN COMMUNITY COLLEGE (3-0). This course will provide students with the philosophical and historical foundations of the American community college system. Students will explore current issues including, but not limited to, the evolution of the community college baccalaureate, principles of accreditation, institutional effectiveness, workforce development, and federal oversight of community colleges.

5355. HIGHER EDUCATION GOVERNANCE (3-0). Students enrolled in this course will examine and compare existing models of state and local college and university governance structures, demographic, social, legal, financial, and planning issues. Forces that affect how colleges and universities are governed will also be explored.

5356. HISTORY, PRINCIPLES, AND PHILOSOPHY OF HIGHER EDUCATION ADMINISTRATION (3-0). This course is for current and prospective faculty, administrators, and staff seeking to learn about the American higher education system. The topics addressed include the history, recent developments, and strategies for future management and administration, finance, organization, governance, and the mission and role of higher education in American society.

5363. ADVANCED EDUCATIONAL RESEARCH (3-0). An in-depth coverage of selected topics in the design of research and the collection and analysis of data. Topics include multivariate analyses, experimental and quasi-experimental designs, development and selection of data collection instruments, focus group interviewing, observational research, the delphi method, and interpretive analysis.

5371. PERSONNEL AND SCHOOL LAW (3-0). Focuses on understanding the relationship between motivation and the management of human resources; articulate the basics of team management and group facilitation; identify proper procedures for recruiting, assignment, and inducting personnel; and recognize the legal requirement for suspension, transfer, reduction in force and dismissal of professional personnel.

5373. SUPERINTENDENCY (3-0). Focuses on understanding the relationship between motivation and the management of human resources; articulate the basics of team management and group facilitation; identify proper procedures for recruiting, assignment, and inducting personnel; and recognize the legal requirement for suspension, transfer, reduction in force and dismissal of professional personnel.

5374. ADVANCED SCHOOL BUSINESS ADMINISTRATION (3-0). Survey principles of public school finance at the local, state, and federal levels. Examines the school budgeting process, methods of school funds accounting and techniques of school business management.

5376. EDUCATIONAL GOVERNANCE (3-0). Focus on the appointed and elected entities and bureaucracies that determine and implement policy in public education.

5377. CONTEMPORARY ISSUES IN EDUCATION (3-0). An exploration of selected controversial issues in contemporary education. Symposium/seminar/lecture format.

5378. ADVANCED CURRICULUM AND PROGRAM ASSESSMENT (3-0). Focuses on the processes of implementing district-wide curriculum, programs, and other innovations in school systems. Topics include: recent research on the implementation of change in curriculum and instruction, trends in education, strategic and contextual planning, program and student assessment and accountability, and national curriculum projects.

5379. SUPERINTENDENCY INTERNSHIP (0-3). Provides experiences in the various roles and responsibilities of a superintendent of schools under the direction of a school district mentor and a university supervisor. An internship project will be developed in consultation with public school and university personnel.

5380. DIVERSITY IN EDUCATIONAL SETTINGS (3-0). Effective leadership, instruction, and management strategies for work in diverse educational settings. Designed to provide increased self-awareness and insight into issues of diversity such as culture, ethnicity, exceptionality, gender, language, and socioeconomic status. Demographic issues along with urban and suburban educational settings will also be addressed.

5381. POLITICAL AND LEGAL ASPECTS OF EDUCATION (3-0). Focus on the legal foundation of public education, political theory, and application of political skills in working with school personnel, students, parents, and community organizations. The role of the law, court rulings, and the politics of school governance at the federal, state, and local levels will be addressed.

5382. FOUNDATIONS OF EDUCATIONAL ADMINISTRATION (3-0). Will address the various aspects of instructional leadership roles and responsibilities of central office as well as building level administrators and supervisors. Topics included will be history of educational administration, educational philosophy, the global understanding of administrative roles in urban and rural settings, and professional organizations, as well as an overview of educational reforms, site-based management, governance, instructional management, evaluation, exchanging ideas, making changes, coaching beginning teachers, mentoring of teachers and peers, and a diverse community.

5383. THE PRINCIPALSHIP (3-0). The Principalship will address the role of the campus leader in the leadership, organization and administration of schools. The importance of campus culture, climate, vision and ethics will be stressed throughout standards-based instruction, case studies, developmental activities, readings, reflections and field experiences. The importance of appropriate principal induction will be stressed along with the concepts of the principal as scholar-practitioner and proactive leader. An emphasis will be placed on continuous school improvement and a commitment to professional development.

5384. RESOURCE MANAGEMENT IN EDUCATION (3-0). School finance, as well as auxiliary areas of resource management, will be addressed. The emphasis will be on the use of technology, alternative models of financing and budgeting, and sources of revenue from the federal, state, and local levels as well as from private sources. The course is designed to assist administrators in developing an understanding of the functions, operation, and evaluation of auxiliary services which support the educational program.

5388. EDUCATIONAL POLICY ISSUES IN THE PUBLIC SCHOOLS (3-0). Examination of positions on policy issues of importance in public education.

5389. ADMINISTRATIVE INTERNSHIP (1-15). Designed to provide prospective educational administrators job-related experiences under supervision in an appropriate educational setting. An approved professional study is designed in relationship to the intern's interest and past experiences. Can be repeated for credit with approval of advisor.

5390. SELECTED TOPICS IN EDUCATION (3-0). An examination of different topics related to education. This seminar may be

repeated for credit as the topic changes.

5391. INDEPENDENT RESEARCH (3-0). Research for thesis substitute or equivalent over topic agreed upon between student and instructor. Can be repeated for credit with permission.

5395. FUTURISTIC LEADERSHIP ROLES IN SCHOOL ADMINISTRATION (5-2). Concepts and skills to prepare educational leaders for learner-centered schools and to anticipate and foster the professional development of all staff and parents in the learning community.

5399. CAPSTONE INTERNSHIP IN EDUCATIONAL LEADERSHIP AND POLICY STUDIES (1-15). Successful completion of the Capstone Internship will fulfill the comprehensive examination requirements for the graduate degree and/or certification. Requirements of ELPS 5399 will include, but not be limited to, those collaboratively established by University faculty and school administrative personnel.

6304. K-16 QUANTITATIVE RESEARCH DESIGN AND METHODOLOGY (3-0). Advanced course that covers the logic of research methods and design with an emphasis on empirical and other quantitative methods, including designing, conducting, and analyzing research from multiple paradigms. Emphasis will be placed on the steps involved in the administration of a research project including literature review, methodology, data collection and analysis, and presentation and publication in multiple media. State-of-the-art technology will be utilized.

6308. QUALITATIVE RESEARCH DESIGN AND METHODOLOGY (3-0). Research processes including developing interview questions, interviewing, coding/analyzing, interpreting data, theorizing, and reporting results, with participant observation as needed. Special focus on methods available to triangulate/verify data in order to confirm or achieve convergent validity. Establishing appropriate safeguards to ensure that findings are drawn from the data.

6310. STATISTICAL METHODS (3-0). Statistical applications that emphasize sampling theory, normal, t, and F distributions, hypothesis tests, types of errors, power, analysis of variance for designs with one or more levels of classification, random effects and mixed models, comparisons among means, randomized block designs, designs with repeated measures including split-plot designs, zero-order correlation, and simple linear regression. More advance principles of parametric and non-parametric statistics will also be emphasized. State-of-the-art technology will be utilized.

6315. ADVANCED STATISTICAL METHODS (3-0). Review of correlation topics including zero-order, part and partial correlation, two variable linear regression theory, standard error of estimate, coefficient of determination, test for linearity of regression, relation of correlation ratio to analysis of variance, multiple correlation, point-biserial correlation, phi coefficient, tetrachoric correlation, canonical correlation, rank correlation, Fisher's Z and significance test for r, and effect size. Fundamentals of multiple regression including relationship to analysis of variance, and analysis of covariance. General introduction to factor analysis models, multiple analysis of variance, multiple analysis of covariance, and meta-analysis. Applicability to K-16 studies.

6320. K-16 PHILOSOPHY AND HISTORY POLICY RESEARCH (3-0). Analysis of the roles of history, philosophy, culture, and values in shaping educational policy. Topics include the Greek Academies, the Medieval Universities, Progressivism, Neo-Conservatism, and Postmodern perspectives, as necessary antecedents to the K-16 movement. Detailed analysis of the roles, history, philosophy, culture, and values for public school and policy making within institutions of higher education.

6325. K-16 FINANCE POLICY RESEARCH (3-0). A study of business principles and their importance for decision making in the educational setting. Topics include budgeting, accounting, financial reporting, and planning in the budgeting process in educational institutions. Particular emphasis will be given to the various approaches to government funding of both public schools and institutions of higher education.

6330. K-16 LEGAL POLICY RESEARCH (3-0). Critical analysis of the legal underpinnings of public K-16 education with particular emphasis on the United States Constitution. Attention will also be paid to varieties of statutory construction, the role of case law, and the significance of administrative decisions in the K-16 context. Legal implications of synergistic relationships spanning the K-16 context.

6335. K-16 INSTITUTIONAL EFFECTIVE POLICY RESEARCH (3-0). A comprehensive course in student outcomes assessment, with particular emphasis on the role of outcomes assessment in institutional accountability and accreditation. Addresses the relationship between outcomes assessment and strategic planning. Exploration of outcomes assessment in public schools and institutions of higher education.

6340. K-16 ORGANIZATIONAL LEADERSHIP RESEARCH (3-0). Organizational behavior in K-16 settings with reference to interpersonal relationships, hierarchy, management style, and communication. Analysis of both classical and contemporary organizational theories, and their application in K-16 settings.

6345. K-16 HUMAN RESOURCES LEADERSHIP RESEARCH (3-0). Human resource needs in educational settings, including faculty and staff recruitment, selection, evaluation, retention, promotion, tenure, grievances, and leadership and personnel development.

6350. K-16 CURRICULUM LEADERSHIP RESEARCH (3-0). Foundations, principles, and issues of curriculum, including vertical alignment and the middle college concept. Exploration of curriculum development in both public schools and institutions of higher education. Analysis of the role of articulation agreements.

6355. K-16 STUDENT SERVICES LEADERSHIP RESEARCH (3-0). Analysis of the student services, co-curricular, extracurricular, and auxiliary enterprise functions of both public schools and institutions of higher education. Particular emphasis on the relationship with the institutions' stated curricula, purposes, and institutional missions.

6380. K-16 INTERNSHIP IN POLICY RESEARCH (10-0). An internship experience in K-16 policy research that provides an opportunity for participants to experience the process of policy research with an experienced professional mentor and university supervisor. The internship experience will be individualized to best meet the individual student's needs, aptitudes, and aspirations in the context of K-16 policy research.

6385. K-16 INTERNSHIP IN LEADERSHIP RESEARCH (10-0). An internship experience in K-16 leadership research that provides an opportunity for participants to experience the process of policy research with an experienced professional mentor and university supervisor The internship experience will be individualized to best meet the individual student's needs, aptitudes, and aspirations in the context of K-16 leadership research.

6390. SELECTED TOPICS K-16 EDUCATIONAL LEADERSHIP RESEARCH (3-0). Topics will vary by semester, and may afford students the opportunity for choice within the cohort design. Selected topics courses will provide opportunities for faculty to teach courses in their area of expertise that meet students' needs, aptitudes, and aspirations. Examples of selected topics that may be offered in leadership research include: K-16 student judicial processes, K-16 academic program administration, and K-16 student information management systems. May be repeated for credit with permission of instructor.

6392. SELECTED TOPICS K-16 EDUCATION POLICY RESEARCH (3-0). Topics will vary by semester, and may afford students the opportunity for choice within the cohort design. Selected topics courses will provide opportunities for faculty to teach courses in their area of expertise that meet students' needs, aptitudes, and

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Graduate Faculty

Professors

Buckwalter, McKeown, Ricard

Associate Professors

Fincher, McDonough, Wilson

Assistant Professors

Blevins, Keller, Nelson, Trowbridge, Ray

Clinical Faculty

Crow, Hawkins, Heddins, Krawietz, Olson, Ptak, Yilla

Master of Science in Physiology of Exercise

Objective

The program of study leading to the Master of Science (M.S.) in Physiology of Exercise is designed to accomplish two major objectives:

- To prepare students for employment in clinically-oriented environments that place an emphasis on research
- To provide students with the academic and research skills needed for doctoral study in physiology of exercise

Current departmental faculty members have been academically trained in, and are actively publishing in the areas of physiology of exercise and the general areas of allied health sciences. The ongoing research in these areas provides the primary focus for the M.S. program. Program graduates will be well prepared to work as researchers in exercise physiology laboratories and to enroll in doctoral programs in this content area.

Students are encouraged to present their research at state and national meetings of the following organizations: American College of Sports Medicine (ACSM), National Athletic Trainers' Association (NATA), National Strength and Conditioning Association (NSCA). The M.S. degree combined with supervised clinical experience will assist students in their preparation for national certification exams.

Admission Requirements

Unconditional Admission

- Current GRE score of at least 400 on the verbal test of the GRE and a score of at least 600 on the quantitative test of the GRE.
- 3.0 GPA for the degree and/or 3.0 GPA during the last 60 hours of undergraduate work
- undergraduate and/or graduate course work related to exercise physiology.
- 3.0 GPA on all graduate work
- 3 letters of reference on file

Probationary Admission

Applicants failing to meet the unconditional admission GRE criteria or having a GPA less than 3.0 may be considered for probationary admission in which case the following additional criteria will also be considered by the Graduate Studies Committee:

- Professionally relevant experience
- A sample of technical writing may be requested

Applicants admitted on probation will be required to maintain a B or better average during their first 12 hours of graduate study.

A Graduate Advisor within the Department of Kinesiology will review transcripts of prospective students to determine what prerequisites are needed prior to enrollment in courses within the proposed program. If deficiencies are identified, a pre-program of study designed to prepare the student for graduate course prerequisites will be written and signed by the prospective student and the Graduate

Advisor.

Applicants seeking admission to an educator preparation program in the College of Education may not be admitted or readmitted to those programs if they have been suspended from The University of Texas at Arlington or any other university or program for reasons other than academic reasons.

Graduate Assistantships

Graduate Research Assistantships (GRAs) and Graduate Teaching Assistantships (GTAs) are available through the Department of Kinesiology. Application forms are available through the departmental web page or by calling the Department of Kinesiology. Assistantships are contingent upon admission to the M.S. program and academic background.

GRAs and GTAs are responsible to pay for tuition and fees. Both in- and out-of-state graduate assistants pay in-state tuition. UT Arlington's tuition is among the lowest in the nation. Graduate students can obtain an estimate of the cost of tuition and fees by viewing the UT Arlington Office of Finance and Administration Web site.

The opportunity to teach summer classes exists, but summer support is not guaranteed. A benefits package that includes medical, life, accidental death and dismemberment insurance is also provided. At the present time, half of the cost of these benefits is paid by the state; coverage begins 90 days after the first day of employment. Optional vision and dental insurance is available for a small fee.

The GTA Committee will begin consideration of applications on February 1. Assistantships are contingent upon prior acceptance to The Graduate School, but we will consider your application while admission is pending. We will continue to review applications until all positions are filled. Please direct all inquiries to Dr. Mark D. Ricard, at ricard@uta.edu or at 817-272-0764.

College of Education Dean's Master's Fellowships

When available, the Dean of the College of Education periodically offers a limited number of graduate fellowships for first-time master's students at The University of Texas at Arlington who meet all of the criteria for that specific fellowship. One criterion is that students must be unconditionally admitted to the graduate school. For more information on the fellowship, go to the College of Education Web site at **www.uta.edu/coed/scholarships.**

Degree Requirements

All students accepted into the Master of Science in Physiology of Exercise program will complete 36 hours of coursework consisting of 21-24 semester hours Physiology of Exercise core and research courses. Students then have the option of selecting one of the following Exercise Physiology tracks: Thesis Research Track, Non-Thesis Health/Fitness Track or Non-Thesis Clinical Track. Each Exercise Physiology track culminates with either a 6 hour master's thesis or a 3 hour research manuscript. Detailed information about each plan of work is available on the Kinesiology Department Web site: **www.uta.edu/coed/kinesiology/ms.**

Coursework and Completion Requirements

- Coursework that is more than six years old at the time of graduation or teacher/administrator certification program completion cannot be used toward meeting the requirements for a master's degree or graduate-level certification.
- Master's degree and graduate level certification programs must be completed within six years (time in military service excluded) from initial registration in the Graduate School.
- Appropriate state exams and application to the State Board for Educator Certification for a standard certificate must be made within six months of completion of residency/practicum/program. If a candidate allows the six month period to go by without passing all state exams and applying for certification, additional coursework and/or state exams will be required.

Courses

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Kinesiology (KINE)

5125. IMMUNOLOGY (1-0). This course will include a brief review of the immune system and factors that affect immune function with emphasis on the effect of exercise and stress on muscle and overall immune function. The effect of nutrition and over-training on the immune system and associated syndromes/diseases will also be presented.

5190. SPECIAL TOPICS IN KINESIOLOGY (1-0). In-depth study of selected topics in physical education and exercise science. May be repeated when topics vary. Prerequisite: consent of instructor.

5191. INTERNSHIP IN CARDIOPULMONARY REHABILITATION (1-0). The student will complete 400 internship hours in an approved Cardiopulmonary rehabilitation setting. The student may take two semesters of KINE 5191 at 200 hours each. The student will be involved in patient/client assessment, training, rehabilitation, risk factor identification and lifestyle management services provided for individuals with or at risk for cardiovascular, pulmonary, and metabolic diseases. In addition the student will observe common cardiac surgeries and diagnostic procedures to better understand the pathophysiology and treatment of cardiovascular, pulmonary and metabolic disease.

5192. INTERNSHIP IN GRADED EXERCISE TESTING FOR HIGH RISK POPULATIONS (1-0). The student will complete 200 hours of graded exercise testing in an approved hospital or outpatient clinical setting which conducts exercise tests for high risk populations, including clients with suspected cardiopulmonary and metabolic diseases. The student will be exposed to noninvasive (echocardiography and graded exercise testing) and invasive methods used to diagnose cardiopulmonary and metabolic disease, including procedures conducted in cath and nuclear testing laboratories.

5193. PHYSIOLOGY OF EXERCISE INTERNSHIP (1-0). Individualized academic training in an external professional exercise physiology setting (e.g., physical medicine, athletic training, external laboratory, health/fitness facility, professional teams or sports management) under the direct supervision of an exercise science professional.

5194. RESEARCH IN KINESIOLOGY (1-0). Individually approved research projects selected from the various areas of Kinesiology.

5195. INTERNSHIP IN GRADED EXERCISE TESTING FOR HIGH RISK POPULATIONS (1-0). The student will complete 200 hours of graded exercise testing in an approved hospital or outpatient clinical setting which conducts exercise tests for high risk populations, including clients with suspected cardiopulmonary and metabolic diseases. The student will be exposed to noninvasive (echocardiography and graded exercise testing) and invasive methods used to diagnose cardiopulmonary and metabolic disease, including procedures conducted in cath and nuclear testing laboratories.

5198. THESIS (1-0).

5230. BODY COMPOSITION (1-3). Lecture and laboratory sessions will investigate component models, anthropometry, morphological considerations, obesity and techniques for assessing body composition. Prerequisite: KINE 5320 or concurrent enrollment.

5290. SPECIAL TOPICS IN KINESIOLOGY (2-0). In-depth study of selected topics in physical education and exercise science. May be repeated when topics vary. Prerequisite: consent of instructor.

5291. INTERNSHIP IN CARDIOPULMONARY REHABILITATION (1-0). The student will complete 400 internship hours in an approved Cardiopulmonary rehabilitation setting. The student may take two semesters of KINE 5191 at 200 hours each. The student will be involved in patient/client assessment, training, rehabilitation, risk factor identification and lifestyle management services provided for individuals with or at risk for cardiovascular, pulmonary, and metabolic diseases. In addition the student will observe common cardiac surgeries and diagnostic procedures to better understand the pathophysiology and treatment of cardiovascular, pulmonary and metabolic disease.

5292. SPECIAL TOPICS IN KINESIOLOGY (2-0).

5293. PHYSIOLOGY OF EXERCISE INTERNSHIP (2-0). Individualized academic training in an external professional exercise physiology setting (e.g., physical medicine, athletic training, external laboratory, health/fitness facility, professional teams or sports management) under the direct supervision of an exercise science professional.

5294. RESEARCH IN KINESIOLOGY (2-0). Individually approved research projects selected from the various areas of Kinesiology.

5298. THESIS (2-0).

5300. RESEARCH METHODS IN KINESIOLOGY (3-0). This course is an overview of concepts and procedures necessary for designing, conducting, and analyzing research in Kinesiology from multiple research paradigms. The course will focus on the steps involved in the administration of a research project, including literature review, design, data collection and analysis.

5305. APPLIED STATISTICAL PRINCIPLES IN KINESIOLOGY (3-0). The course covers descriptive statistics, elementary probability, one- and two-population mean and variance comparisons, ANOVA, simple linear regression, and correlations. In addition, more advanced principles in parametric and non-parametric statistics will be emphasized.

5320. ADVANCED PHYSIOLOGY OF EXERCISE (2-2). Lecture and laboratory sessions are designed to investigate concepts of energy metabolism, lactate production and accumulation, energy expenditure, excess post exercise oxygen consumption, cardiovascular and temperature regulation, neuromuscular control, aerobic and anaerobic adaptations and ergonomics.

5322. METABOLISM (2-2). This course will address the regulation of fat and carbohydrate metabolism at rest and during exercise, cellular respiration, energy transfer, and energy systems. Calorimetry, respiratory exchange ratio, and substrate utilization during exercise will be assessed as part of the laboratory section of this course.

5326. CARDIOCIRCULATORY PHYSIOLOGY OF EXERCISE (2-3). The structure and function of the cardiovascular and circulatory system will be studied, as well as, cardiac control, the cardiac cycle, cardiac output, hemodynamics, vascular resistance, arterial-venous oxygen difference and oxygen delivery and consumption. Heat production and thermal control during exercise will also be addressed in lecture and laboratory sessions.

5327. PULMONARY PHYSIOLOGY OF EXERCISE (3-0). Examines the structure and function of the pulmonary system including mechanics of breathing, lung capacity tests, pulmonary circulation, lung diseases, gas exchange, ventilation, diffusing capacity, acid/base balance, neural and chemical regulation of breathing, and blood flow with respect to rest and exercise values in healthy and diseased populations. Prerequisite: KINE 5320.

5328. NEUROMUSCULAR PHYSIOLOGY OF EXERCISE (2-3). The structure and function of muscle, including the motor unit, control and integration, central and peripheral modifiers of neuromuscular control and biochemical characteristics of fibers will be studied. These concepts will also be applied to concepts in strength and power development.

5329. STRENGTH AND CONDITIONING (3-0). The course covers the physiology and biomechanics of strength training and conditioning. Additional topics include: testing and evaluation of athletes, resistance training techniques, training program design, and organization administration of a strength training facility. This course is designed to prepare students to take the CSCS certification examination. Prerequisite: current CPR certification, KINE 3300, KINE 3301, KINE 3315, or permission of the instructor.

5335. GRADED EXERCISE TESTING AND PRESCRIPTION (2-3). The knowledge and skills necessary for assessment of health history and appraisal, blood pressure, electrocardiogram, cardiovascular fitness and function will be acquired in lecture and laboratory sessions. Various test modalities and protocols will be discussed for health and diseased populations.

5336. ECG INTERPRETATION (3-0). Principles of electrocardiography will be explored, with emphasis on interpretation of resting and stress ECGs. Interpretation of dynamic rhythm strips will prepare students to work in cardiac rehabilitation and other allied health professions.

5338. EXERCISE PRESCRIPTION FOR SPECIAL POPULATIONS (2-3). This course will discuss the pathophysiology of cardiovascular,

metabolic and pulmonary diseases. Methods of exercise prescription and issues of concern will also be presented for these populations, as well as, low back pain, pregnancy, osteoporosis, cancer, anorexia and bulimia, children, adolescents, teens, older adults, fibromyalgia, multiple sclerosis, and chronic fatigue syndrome. Practical application of leadership skills and hands-on instruction will be addressed in the laboratory portion of this course.

5345. NUTRITION IN HEALTH AND FITNESS (3-0). This course will examine the relationship between diet and development and treatment of chronic diseases including cardiovascular disease, diabetes, osteoporosis, and cancer. Research on clinical, epidemiological, animal, and lab studies will be examined, as appropriate. Benefits and side effects associated with sports supplements and ergogenic aids will be discussed.

5350. APPLIED BIOMECHANICS (3-0). Application of Newtonian mechanics to human movement analysis. Biomechanical models using three-dimensional video and force plate data will be used to analyze human movement.

5389. RESEARCH MANUSCRIPT SUBMISSION (3-0). The student will collect scientific data in the Physiology of Exercise laboratories or in a work-related environment under the supervision of a faculty member. The student will analyze the data, write a manuscript, and submit a manuscript for publication in a peer-reviewed journal. This course must be taken in the final semester of graduate work and requires approval of the Graduate Advisor.

5390. SPECIAL TOPICS IN KINESIOLOGY (3-0). In-depth study of selected topics in physical education and exercise science. May be repeated when topics vary. Prerequisite: consent of instructor.

5392. SPECIAL TOPICS IN KINESIOLOGY (3-0).

5393. PHYSIOLOGY OF EXERCISE INTERNSHIP (3-0). Individualized academic training in an external professional exercise physiology setting (e.g., physical medicine, athletic training, external laboratory, health/fitness facility, professional teams or sports management) under the direct supervision of an exercise science professional.

5394. RESEARCH IN KINESIOLOGY (3-0). Individually approved research projects selected from the various areas of Kinesiology.

5398. THESIS (3-0).

5498. THESIS (4-0).

5598. THESIS (5-0).

5694. RESEARCH IN KINESIOLOGY (6-0). Individually approved research projects selected from the various areas of Kinesiology.

5698. THESIS (6-0).

5994. RESEARCH IN KINESIOLOGY (9-0). Individually approved research projects selected from the various areas of Kinesiology.

Other Graduate Course Information

In addition to the Master of Science in Physiology of Exercise, the Department of Kinesiology allows students to enroll in approved special topics courses to fulfill course requirements for other degree programs such as the UT TeleCampus graduate programs in Kinesiology, Nursing, Biomedical Engineering and the Master of Education in Teaching within the College of Education at UT Arlington.

The College of Engineering

Dean: Bill D. Carroll, Ph.D., P.E.
634 Nedderman Hall • Box 19019 • 817.272.2571 • www.uta.edu/engineering

Mission

The mission of the College of Engineering is to meet the needs of industry and society by:

- Producing highly competent graduates at the baccalaureate, master's and doctoral levels,
- Performing state-of-the-art research in the disciplines comprising the diverse fields of engineering, and
- Providing service to the community and engineering profession through outreach programs, involvement in professional societies, consulting, and interaction with industry and government.

History and Overview

The College of Engineering at The University of Texas at Arlington is the third largest engineering college in Texas, and is the largest and most comprehensive in North Central Texas, with over 3,300 students and 150 faculty members in eight disciplines. Additionally, there are more than 20 research centers producing more than $20 million in research for government and private industry.

The engineering program at UT Arlington evolved from a two-year program that was established at North Texas Agricultural College during the 1930s and 1940s. North Texas Agricultural College became Arlington State College, and in 1959 approval was given to begin a four-year engineering program. In 1965, Arlington State College joined The University of Texas System as The University of Texas at Arlington, and the first master's degree program in engineering was approved. The first Ph.D. program in engineering was added in 1969. Construction of the Engineering Laboratory Building in 1977, the Engineering Annex in 1980, the Automation & Robotics Research Institute (ARRI) in 1987, Nedderman Hall in 1988, the Nanotechnology Research and Teaching Facility in 2001 and the Engineering Office Buildings East and West in 2003 provided additional classroom and research laboratory space for the continued growth of the College of Engineering. Currently, four buildings are in the construction or planning stages: an Engineering Research Building adjoining the main engineering buildings, an expansion of the Engineering Laboratory Building, the Civil Engineering Laboratory Building, and the Center for Structural Engineering Research.

The college is a leader in distance education, providing a convenient way for working engineers to pursue a master's degree. Starting with TAGER, a dedicated microwave communications link in 1975, courses are now distributed on the Internet in streaming video, providing a very convenient access to students. More information can be found at **www.uta.edu/engineering/distance/**.

Research Interests of the Faculty

There is an excellent equipment infrastructure to support research in:

- nanotechnology
- microelectronics and MEMS
- robotics and manufacturing
- materials and their characterization
- pervasive computing
- intelligent systems
- software engineering
- networking
- embedded systems
- database systems
- multimedia systems
- bioinformatics
- information technology
- security
- * transportation systems
- hydrology and hydraulic systems
- * geotechnical engineering
- environmental engineering
- solid mechanics
- structural analysis
- aerodynamics
- flight mechanics and control
- electronic packaging
- energy systems
- optics
- statistics and optimizations
- and many more

There are two formal research centers, the Automation & Robotics Research Institute (ARRI) and the Nanotechnology Research and Teaching Facility (NRTF), with the directors reporting to the Dean of Engineering.

Many College of Engineering faculty members collaborate with professors and researchers in other colleges at UT Arlington and other institutions in the state, around the U.S., and around the world. Therefore, for those interested in doing research as part of graduate training, there are many opportunities to work on research projects that are either within the home department or interdisciplinary with other departments.

Programs

Graduate work in engineering at UT Arlington may lead to the master of science or doctor of philosophy in the following programs:

Aerospace Engineering
Biomedical Engineering
Civil Engineering
Computer Science
Computer Engineering
Electrical Engineering
Industrial Engineering
Materials Science and Engineering
Mechanical Engineering

Master's degree programs are available in:
Logistics
Engineering Management
Software Engineering
Systems Engineering

Graduate work leading to a practice-oriented master's degree usually requires a design project, report, internship or additional coursework. Details are given in the individual program descriptions that follow.

The program in Materials Science and Engineering (MSE) is under the auspices of both the College of Engineering and the College of Science. Biomedical Engineering is a joint program of the UT Arlington Bioengineering Department in association with The University of Texas Southwestern Medical Center at Dallas. The Master of Science in Logistics and Master of Science in Engineering Management are offered in partnership with the College of Business Administration. Descriptions of these programs are in the Interdepartmental and Intercampus Programs section of this catalog.

Please visit the graduate program Web site **www.uta.edu/engineering/graduate** for detailed information.

Program in Aerospace Engineering

www-mae.uta.edu/ae/aemenu.html

Area of Study and Degrees

Aerospace Engineering
M.S., M.Engr., Ph.D.

Master's Degree Plans

Thesis (M.S.) and Non-Thesis (M.Engr.)

Interim Chair

Donald R. Wilson
211B Woolf Hall
817.272.2603

Graduate Advisor

Kent Lawrence
300D Woolf Hall
817.272.2019

Graduate Faculty

Professors

Chan, Lawrence, Lu, Seath, Wang, Wilson

Associate Professors

Shiakolas, Tong

Assistant Professors

Chudoba, Dennis, Dogan, Huang, Subbarao

Professors Emeritus

Dalley, Fairchild, Payne

Objective

The overall objective of the graduate program in aerospace engineering is to develop in a student the ability to define a technical problem, establish an appropriate mathematical or experimental model based on a firm understanding of the physical nature of the problem, analyze the problem by theoretical, numerical, or experimental techniques, and evaluate the results. Although this ability is developed in the context of aerospace problems, it is applicable to the engineering of any physical system. The program is designed for a student with any of the following specific objectives:

1. A sound foundation in advanced mathematics, science, and engineering which will equip the student well for research and development work or for further advanced study toward a doctoral degree in engineering.
2. A program of advanced study which allows specialization in one of the following areas:
   - Fluid dynamics, aerodynamics and propulsion (theoretical and applied aerodynamics, gasdynamics, viscous fluid mechanics, turbulence, computational and experimental fluid dynamics, bio-fluidics, hypersonic flow theory, high-temperature gasdynamics, V/STOL and rotorcraft aerodynamics, air-breathing and rocket propulsion);
   - Structural mechanics and structures (solid mechanics, aerospace structures, structural dynamics, composite structures and material characterization, damage tolerance, smart structures, structure optimization, sensor technology, high-temperature structures and materials, aeroelasticity);
   - Flight mechanics and controls (atmospheric and space flight mechanics, orbital mechanics, guidance, navigation and control);
   - Vehicle design (conceptual aircraft design, atmospheric flight vehicle design, spacecraft design, computer-aided engineering).
3. A balanced but non-specialized program of advanced study in aerodynamics, astronautics, flight dynamics, structural analysis, propulsion, and fluid mechanics, with emphasis on experimental techniques and modern mathematical analysis.

Admission Requirements

Admission Criteria

Admission to the graduate program in AE is based on equal weighting of the following six criteria:

1. An overall GPA, as calculated by the Graduate School, of 3.0/4.0 or higher in undergraduate coursework for Master of Science and Master of Engineering applicants, and 3.2/4.0 for Doctoral applicants.
2. Relevance of the student's previous degrees to the AE curriculum.
3. Reputation of the universities or colleges the student has attended.
4. A GRE score of at least 400 (verbal) and 650 (quantitative) for Master program applicants, and at least 500 (verbal) and 750 (quantitative) for Ph.D. applicants.
5. Three satisfactory written recommendation letters from prior professors or supervisors.
6. A written essay on the student's goals and reasons for pursuing graduate studies.

Waiver of the Graduate Record Examination

A waiver of the Graduate Record Examination may be considered for a UT Arlington graduate who has completed a BSAE degree within the past 3 years. The student's GPA must equal or exceed 3.0

in each of two calculations: (a) in the last 60 hours of study and (b) in all undergraduate coursework completed at UT Arlington. The GRE waiver may be extended to include non-UT Arlington candidates that have undergraduate degrees in mechanical engineering (with GPA of 3.25 or above) from U.S. universities with an ABET accredited engineering program or other select U.S. universities subject to graduate advisor's approval. The waiver of the GRE applies only to applicants for the master's degree programs. Interested applicants should contact the Mechanical Engineering Graduate Advisor.

Admission Status

- Unconditional Admission: Applicants who show by meeting all of the above criteria that they are fully prepared to start immediately on their selected graduate program of interest will be admitted unconditionally.
- Probationary Admission: Applicants who fail to meet the conditions for unconditional admission, but satisfy at least four of the six criteria listed above, will be considered for probationary admission. The graduate advisor normally identifies areas of deficiency that must be removed by successfully completing assigned remedial courses before the admission status is changed to unconditional.
- Provisionary Admission: Applicants who are unable to supply all of the required documentation prior to the admission deadline, but who otherwise appear to meet the admission criteria, may be granted provisional admission. Generally, provisional admission is granted for only one semester.
- Denial: Applicants who fail to meet at least four of the six admission criteria will normally be denied admission.
- Deferral: A deferred decision may be granted when an application file is incomplete or when a denied decision is not appropriate.

For applicants with no prior training in aerospace engineering, the same minimum criteria will apply and, in addition, their records will be reviewed in relation to the intended program of study. Probationary status with specific remedial work required may be a basis for acceptance of such applicants.

Criteria for Award of Fellowships and Assistantships

Applicants who demonstrate skills, experience or interests that meet the needs of the AE Graduate Program will be considered for fellowships or assistantships.

Program for Master's Degree in Aerospace Engineering

The Program enables outstanding UT Arlington senior undergraduate students in Aerospace Engineering to satisfy degree requirements leading to a master's degree in Aerospace Engineering while completing their undergraduate studies. When senior-level students are within 15 hours of completing their undergraduate degree requirements, they may take up to 9 hours of graduate level coursework designated by the Aerospace Engineering Program to satisfy both undergraduate and graduate degree requirements. In the limiting case, a student completing the maximum allowable hours (9) while in undergraduate status would have to take only 21 additional hours to meet minimum requirements for graduation in a 30 hour thesis master's degree program (M.S.) or 27 additional hours for a non-thesis master's degree program (M. Engr.)

Interested UT Arlington undergraduate aerospace engineering students should apply to the Aerospace Engineering Program when they are within 30 hours of completing their bachelor's degrees. They must have completed at least 30 hours at UT Arlington, achieving a GPA of at least 3.0 in those courses, and have an overall GPA of 3.0 or better in all college courses. Additionally, they must have completed at least 11 hours of specified undergraduate foundation courses with a minimum GPA of 3.3 in those courses. Program details are provided in the UT Arlington Undergraduate Catalog. Contact the Undergraduate Advisor or Graduate Advisor in Aerospace Engineering for more information about the program.

Requirements for B.S. to Ph.D. Track Degree

1. An overall GPA, as calculated by the Graduate School, of 3.0 or higher in undergraduate coursework.
2. Relevance of the student's previous degrees to the ME curriculum.
3. Reputation of the universities or colleges the student has attended.
4. A GRE score of at least 500 (verbal) and 750 (quantitative).
5. Three satisfactory written recommendation forms from prior professors or supervisors.
6. A written essay on the student's goals and reasons for pursuing graduate studies.

Continuation

The Aerospace Engineering Graduate Program, in fulfillment of its responsibility to graduate highly qualified professional engineers, has established certain policies and procedures. In addition to the requirements of the Graduate School listed elsewhere, to continue in the program each aerospace engineering graduate student must:

1. Maintain at least a B (3.0) overall GPA in all coursework major and minor, and
2. Demonstrate suitability for professional engineering practice.

At such time as questions are raised by aerospace engineering graduate faculty regarding either of the above, the student will be notified and will be provided the opportunity to respond to the Committee on Graduate Studies in Aerospace Engineering. The Committee on Graduate Studies will review the student's performance and make a recommendation concerning the student's eligibility to continue in the program. Appeal of a decision on continuation may be made through normal procedures outlined in the section of this catalog entitled "Grievances Other than Grades."

Degree Requirements

All Graduate Degrees

All entering students must be proficient in mathematics, engineering analysis, and computer programming. Students not meeting these requirements may be admitted on a probationary basis and given a plan of remedial undergraduate coursework. No graduate credit will be granted for courses that are required in the undergraduate aerospace engineering curriculum. Normally, all master's and doctoral candidates in aerospace engineering shall enroll in the Graduate Seminar (AE 5101) a minimum of three times (see course description). Repeat enrollments shall require an oral presentation of thesis/dissertation results. All candidates are required to select a Supervising

Professor and obtain an approved program of work in the second full semester or after 12 hours are completed.

Master of Science or Master of Engineering

The Department of Mechanical and Aerospace Engineering offers both the Master of Science and the Master of Engineering degrees in Aerospace Engineering.

The Master of Science degree requires a minimum of 24 hours of coursework, plus a minimum of 6 hours of thesis registration, and the presentation and defense of an acceptable thesis. Additional research credit hours are often needed for the Master of Science degree. The thesis may be oriented toward either research or advanced engineering analysis and design. Students pursuing the Master of Science option must select a faculty member to act as a Supervising Professor. The Supervising Professor will help to form an appropriate plan of study for elective courses, guide the student through his or her research project, and take care of any required administrative tasks.

The Master of Engineering is a non-thesis program of advanced study, requiring 36 hours of coursework. Credit for up to six hours of the 36 hour requirement may be satisfied by completion of a research project course. The Master of Engineering option is often selected by distance education students. Although the Master of Engineering is a non-thesis degree, students pursuing this option must still select a faculty member to act as a Supervising Professor. The Supervising Professor will assist the student as described above.

Both Master's degree plans require completion of an aerospace engineering core, consisting of courses from the following four areas:

1. Fluid Mechanics and Aerodynamics: AE 5313 Fluid Dynamics, AE 5342 Gasdynamics
2. Solid Mechanics and Structures: AE 5330 Finite Element Methods, AE 5340 Structural Aspects of Design
3. Propulsion: AE 5326 Air-Breathing Propulsion, AE 5347 Rocket Propulsion
4. Flight Mechanics and Controls: AE 5302 Advanced Flight Mechanics

MS students are required to take one course each from three of the four core areas, whereas MEngr students are required to take one course each from all four core areas. In addition to the core courses, a minimum of three credit hours of graduate seminar are also required for the MS degree program, and a minimum of one semester hour of graduate seminar for the MEngr degree program,

Both Master's degree plans also require completion of six credits in a minor area. In most cases, the minor is satisfied by taking AE 5351 Analytical Methods in Engineering, AE 5352 Engineering Analysis, or approved mathematics courses. For students with exceptional mathematics background, the minor may be composed of two courses selected by the student and Supervising Professor that are deemed supportive of the student's area of concentration and meet approval of the Graduate Advisor.

The balance of the required coursework hours may be chosen by the Supervising Professor to meet the student's needs and interests. Normally these additional elective courses should be selected from the offerings of the Program in Aerospace Engineering or the Program in Mechanical Engineering. Courses taken outside the two programs require approval of the student's Supervising Professor as well as the Graduate Advisor.

Doctor of Philosophy

The Ph.D. degree can be tailored to satisfy the individual student's aspirations in choice of the area of specialization, while at the same time providing a broad range of knowledge in the major technical areas comprising the field of aerospace engineering. The program will generally require two to three years of full-time study beyond the Master's degree and will include a scholarly dissertation that provides an original contribution to the literature in aerospace engineering.

All students entering the Ph.D. program are required to take, the Ph.D. Diagnostic Exam: The diagnostic evaluation report must be filed in the Graduate School by the student's Graduate Advisor during the student's first year of doctoral program work but no later than the completion of the first 18 semester hours of coursework beyond appropriate master's level coursework, or the equivalent. This exam is offered twice per year, during the week preceding the start of classes for the fall and spring semesters. Possible outcomes of this evaluation are: 1) continuation in the doctoral program, 2) approval to continue with certain specified remedial work, 3) failure with approval to retake, 4) termination in the program.

Students are eligible to take the comprehensive examination after satisfying all requirements stipulated by the Diagnostic Exam Committee and giving evidence to their doctoral committee of adequate academic achievement by having completed all or most coursework requirements. The comprehensive examination is used to determine if the student has the necessary background and specialization required for the dissertation research and if the student can organize and conduct the research. An applicant must pass this examination to be admitted to candidacy for the Ph.D. degree.

B.S. to Ph.D. Track

In addition to the requirements listed above for the Ph.D. degree, a B.S.-Ph.D. Track student will be required to enroll in at least three hours of research each semester during the student's first two years, receiving a pass/fail grade (no R grade) in these hours. A student may be exempted from enrolling in research hours in the student's initial semester. A B.S.-Ph.D. Track student must have a faculty research (dissertation) advisor prior to the start of the student's second full semester. A B.S.-Ph.D. student must take the Ph.D. diagnostic examination prior to the start of the student's fourth full semester.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Aerospace Engineering (AE)

5101. GRADUATE SEMINAR (1-0). May be repeated as often as required. Enrollment is mandatory for first semester graduate students and for students enrolled in thesis, dissertation, or research courses. Purpose is to acquaint peers and faculty with research in progress at UTA. During each enrollment after the first, students present progress reports on their research. The last report serves as a rehearsal for the oral defense.

5191. ADVANCED STUDIES IN AEROSPACE ENGINEERING (1-0). May be repeated for credit. May be graded P/F.

5291. ADVANCED STUDIES IN AEROSPACE ENGINEERING (2-0). May be repeated for credit. May be graded P/F.

5301. ADVANCED TOPICS IN AEROSPACE ENGINEERING (3-0). May be repeated for credit as topics change. Topics include: hypersonic aerodynamics, transonic aerodynamics, unsteady aerodynamics and optimum aerodynamic shapes.

5302. ADVANCED FLIGHT MECHANICS (3-0). Rigid body motion. Kinematics and dynamics of aerospace vehicles. Linear and nonlinear control of aircraft and spacecraft. Advanced aircraft and spacecraft modeling and control issues. Prerequisite: consent of the instructor.

5311. ADVANCED TOPICS IN ASTRONAUTICS (3-0). Topics include orbital mechanics, Keplerian mechanics, orbit determination, perturbations, numerical techniques, and applied optimal estimation.

5312. ANALYTICAL METHODS IN MECHANICS (3-0). Principles of dynamics of particles and particle systems; Lagrangian and Hamiltonian mechanics; canonical transformations; dynamic system stability; and introduction to dynamical systems analysis using methods such as phase space analysis, surface of sections, etc.

5313. FLUID DYNAMICS (3-0). Basic conservation laws, flow kinematics, special forms of the governing equations, two-dimensional potential flows, surface waves and some exact solutions of viscous incompressible flows. Offered as AE 5313 and ME 5313.

5314. FRACTURE MECHANICS IN STRUCTURAL DESIGN (3-0). Linear elastic fracture mechanics, general yielding fracture mechanics, damage tolerance and durability design, fail safe and safe life design criteria, analysis of fatigue crack growth, residual strength analysis. Also offered as ME 5314. Credit will be granted only once.

5315. FUNDAMENTALS OF COMPOSITES (3-0). Fundamental relationships between the mechanical behavior and the composition of multiphase media; failure criteria discussed. Offered as AE 5315, ME 5348, and MSE 5348. Credit will be granted only once.

5315. FUNDAMENTALS OF COMPOSITES (3-0). Fundamental relationships between the mechanical behavior and the composition of multiphase media; failure criteria discussed. Offered as AE 5315, ME 5348, and MSE 5348. Credit will be granted only once.

5319. ADVANCED FINITE ELEMENT METHODS (3-0). Continuation of AE 5330. Modeling of large systems, composite and incompressible materials, substructuring, mesh generation, solids applications, nonlinear problems. Also offered as ME 5319. Credit will be granted only once. Prerequisite: AE 5330 or ME 5310 or equivalent.

5322. AEROELASTICITY (3-0). Math models for the steady aerodynamics and structural stiffness of aircraft wings are presented and combined into a static aeroelastic math model. Loss of wing lift due to static aeroelasticity as well as the structural instability called aeroelastic divergence are covered.

5325. ADVANCED COMPOSITES (3-0). Review of current state-of-the-art applications of composites: composite structural analysis; structural properties, damage characterization and failure mechanisms; stiffness loss due to damage, notched sensitivity; delamination; impact; fatigue characteristics; composite material testing; material allowables; characteristics of composite joints. Also offered as ME 5349 and MSE 5349. Credit will be granted only once. Prerequisite: ME 5348 or MSE 5348 or AE 5315 or consent of the instructor.

5326. AIR-BREATHING PROPULSION (3-0). Development of thrust and efficiency equations, thermodynamic cycle analysis, cycle design methods of aerospace propulsion systems, component performance analysis methods, component matching and dynamic interactions, and vehicle/propulsion-system integration.

5327. COMPUTATIONAL AERODYNAMICS I (3-0). Solution of engineering problems by finite- difference methods, emphasis on aerodynamic problems characterized by single linear and non-linear equations, introduction to and application of major algorithms used in solving aerodynamics problems by computational methods.

5328. COMPUTATIONAL AERODYNAMICS II (3-0). Review of the fundamental equations of aerodynamics, development of methods for solving Euler, boundary-layer, Navier-Stokes, and parabolized Navier-Stokes equations, application to practical aerodynamic analysis and design problems.

5330. FINITE ELEMENT METHODS (3-0). Finite element method in the study of static response of complex structures and of continual applications to field problems; analytical methods emphasized and digital computer application undertaken. Also offered as ME 5310. Credit will be granted only once.

5331. STRUCTURAL DYNAMICS (3-0). Natural frequencies; forced and random response of complex structural systems studies through the use of the finite element method; computational aspects of these problems discussed, and digital computer applications undertaken. Also offered as ME 5311. Credit will be granted only once.

5332. HYPERSONIC FLOW (3-0). General features of hypersonic flow fields. Inviscid hypersonic flow: thin shock layer theory, Newtonian flow, constant density solutions, small disturbance theory, method of characteristics.

5336. KALMAN FILTERING (3-0). Kalman filter design and implementation. Optimal filtering for discrete-time and continuous-time dynamical systems with noise. Wiener filtering. State-space determination. Also offered as ME 5336 and EE 5322. Credit will be granted only once.

5337. TOPICS IN NONLINEAR SYSTEMS ANALYSIS AND CONTROLS (3-0). Nonlinear systems; phase plane analysis; Poincare-Bendixon theorems; nonlinear system stability; limit cycles and oscillations; center manifold theorem, Lyapunov methods in control; variable structure control; feedback linearization; backstepping techniques. Offered as AE 5337 and ME 5374. Credit will be granted only once.

5338. OPTIMAL CONTROL OF SPACECRAFT MANEUVERS (3-0). Linear and nonlinear optimization methods; optimal control; continuous time Ricatti equation; bang-bang control; singular arcs; differential inclusions; collocation techniques; design of optimal spacecraft trajectories.

5340. STRUCTURAL ASPECTS OF DESIGN (3-0). Emphasis on determination of stresses and prediction of failure in machine and structural components; stress-strain relations in elastic and plastic regions; static failure and failure criteria; residual stress and strain due to yielding; contact stress; notched sensitivity; strain-fatigue life relationship; characteristics of cracks in structural components; creep and creep rupture. Also offered as ME 5339. Credit will be granted only once.

5341. AEROSPACE STRUCTURES (3-0). May be repeated for credit as topics change. Topics may include: the static and dynamic response of structural members and machine elements with and without damage under complex loads. Normal mode method for undamped and proportionally damped systems, component mode synthesis, generally damped systems, complex modes, effect of design modification on system response. Finite element method in the study of the static response of complex structures and of continua; applications to field problems; analytical methods emphasized, and digital computer application undertaken.

5342. GASDYNAMICS (3-0). Review of fundamental compressible flow theory, method of characteristics for perfect gases, the Rankine-Hugoniot conditions, linearized flow theory. Also offered as ME 5342. Credit will be granted only once.

5343. HIGH TEMPERATURE GASDYNAMICS (3-0). Surveys kinetic theory, statistical mechanics, and chemical reaction rate theory. Application to the prediction of thermodynamic properties of gases and the analysis of problems in high-temperature gasdynamics.

5347. ROCKET PROPULSION (3-0). Thrust and efficiency relations, trajectory analysis, introduction to design and performance analysis of chemical (liquid and solid), electrical and nuclear rocket systems, combined cycle propulsion systems, and pulse detonation rockets.

5348. HYPERSONIC PROPULSION (3-0). Design and performance analysis of propulsion systems for sustained flight at hypersonic speeds, airframe/propulsion system integration, supersonic combustion, finite-rate chemistry effects, radiative cooling.

5351. ANALYTIC METHODS ENGINEERING (3-0). Introduction to advanced analytic methods in engineering. Methods include multivariable calculus and field theory, Fourier series, Fourier and Laplace Transforms. Offered as ME 5331 and AE 5351. Prerequisite: Undergraduate degree in engineering, physics, or mathematics.

5352. ENGINEERING ANALYSIS (3-0). Introduction to partial differential equations and complex variable theory with application to modeling of physical systems. Also offered as ME 5352. Credit will be granted only once. Prerequisite: undergraduate degree in engineering, physics, or mathematics.

5360. MULTIDISCIPLINARY INVERSE DESIGN AND OPTIMIZATION (3-0). For a new design of any realistic device to be competitive, it must satisfy a number of often conflicting requirements, objectives, and constraints. This course offers a variety of basic concepts and methodologies for inverse design and optimization with practical applications in fluid mechanics, heat transfer, elasticity, and electromagnetism. Offered as AE 5360 and ME 5360. Credit will be granted only once.

5361. MULTIDISCIPLINARY COMPUTATIONS (3-0). Concurrent engineering analysis involving fluid flow, heat transfer, elasticity, and electromagnetism; design optimization methods for multidisciplinary problems; examples of practical applications. Also offered as ME 5361. Credit will be granted only once. Prerequisite: Reasonable programming skills in FORTRAN or C (C++). Consent of the instructor.

5362. GUIDANCE, NAVIGATION, AND CONTROL OF AEROSPACE SYSTEMS (3-0). Equilibrium glide trajectories for atmospheric flight. Design of guidance and navigation system for various aerospace vehicles. Discussion of the various guidance systems used in a homing missile seeker system, etc. Equilibrium glide trajectories for atmospheric flight, energy guidance methods. Selection and trade-off between various navigation components such as the IMU, GPS and other navigation components. Basics of Kalman filtering.

5363. INTRODUCTION TO ROTORCRAFT ANALYSIS (3-0). History of rotorcraft. Behavior of the rotor blade in hover and forward flight. Rotor configurations, dynamic coupling with the fuselage, elastic and aeroelastic effects. Also offered as ME 5363. Credit will be granted only once.

5364. INTRODUCTION TO AERODYNAMICS OF ROTORCRAFT (3-0). Practical aerodynamics of rotors and other components of rotorcraft. Introduction to performance, handling qualities, and general flight mechanics related to rotorcraft design, test, and certification requirements. Emphasis is on real rotorcraft mission capabilities as defined by the customer. Also offered as ME 5364. Credit will be granted only once.

5365. INTRODUCTION TO HELICOPTER AND TILTROTOR SIMULATION (3-0). Dynamic and aerodynamic modeling of rotorcraft elements using vector mechanics, linear algebra, calculus and numerical methods. Special emphasis on rotors, aerodynamic interference, proper axis system representation, model assembly methods and trimming. Offered as AE 5365 and ME 5365. Credit will be granted only once.

5366. BOUNDARY LAYERS (3-0). An introductory course on boundary layers. The coverage emphasizes the physical understanding and the mathematical foundations of boundary layers, including applications. Topics covered include laminar and turbulent incompressible and compressible layers, and an introduction to boundary layer transition. Also offered as ME 5381.

5367. HIGH-SPEED AIRCRAFT AND SPACE ACCESS VEHICLE DESIGN (3-0). An introductory course on high-speed aircraft and space access vehicle design. The course concentrates on reusable flight vehicles. Topics covered are historical case studies, design disciplines, design space visualization and proof of design convergence. Prerequisites: consent of the instructor.

5368. FLIGHT VEHICLE SYNTHESIS AND SYSTEMS ENGINEERING (3-0). An advanced course on flight vehicle design. The course concentrates on systems engineering aspects for managing a modern flight vehicle development programme. Key techniques are introduced which enable the design team to visualize the design space and to arrive at a robust design compromise. Prerequisites: MAE 4350, MAE 4351, consent of the instructor.

5369. FLIGHT VEHICLE TESTING AND FLIGHT SIMULATION (3-0). An introductory course on flight test techniques and flight simulation. The course introduces flight vehicle certification from the perspective of the designer and test pilot. Classical flight test procedures and flight simulation techniques are introduced. Prerequisites: MAE 4350, MAE 4351, consent of the instructor.

5380. DESIGN OF DIGITAL CONTROL SYSTEMS (3-0). Sampling and data reconstruction. Z-transforms and state variable descriptions of discrete-time systems. Linear quadratic optimal control and state estimation. Quantization and other nonlinearities. Computer simulations and/or laboratory implementation of real-time control systems. Construction of discrete-time mathematical model system. Analysis of system behavior using discrete-time model and evaluation of the system performance. Discrete controller design techniques such as root locus, frequency response, and state space techniques. Evaluate and test the system performance using digital simulations. Also offered as ME 5380. Credit will be granted only once. Prerequisite: Undergraduate Level Introduction to Automatic Control Course.

5391. ADVANCED STUDIES IN AEROSPACE ENGINEERING (3-0). May be repeated for credit. May be graded P/F.

5398. THESIS (3-0). Graded R/F only. Co-requisite: AE 5101.

5698. THESIS (6-0). Graded P/R/F. Co-requisite: AE 5101.

5998. THESIS (9-0). Graded P/R/F. Co-requisite: AE 5101.

6197. RESEARCH IN AEROSPACE ENGINEERING (1-0). May be repeated for credit. Co-requisite: AE 5101.

6297. RESEARCH IN AEROSPACE ENGINEERING (2-0). May be repeated for credit. Co-requisite: AE 5101.

6397. RESEARCH IN AEROSPACE ENGINEERING (3-0). May be repeated for credit. Co-requisite: AE 5101.

6399. DISSERTATION (3-0). Graded F, R. Prerequisite: admission to candidacy for the Doctor of Philosophy degree. Co-requisite: AE 5101.

6697. RESEARCH IN AEROSPACE ENGINEERING (6-0). May be repeated for credit. Graded P/F/R/W. Co-requisite: AE 5101.

6699. DISSERTATION (6-0). Graded F, R. Prerequisite: admission to candidacy for the Doctor of Philosophy degree. Co-requisite: AE 5101.

6999. DISSERTATION (9-0). Graded F, R, P. Prerequisite: admission to candidacy for the Doctor of Philosophy degree. Co-requisite: AE 5101.

Department of Bioengineering

www.uta.edu/biomed_eng

Area of Study and Degrees
Biomedical Engineering
M.S., Ph.D.
Biomedical Engineering
Industrial Internship

Master's Degree Plans
Thesis and Thesis-Substitute

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Graduate Faculty
Professors
Behbehani, Chuong, Liu

Associate Professor
Tang

Assistant Professors
Alexandrakis, Davé, Nguyen, Zuzak

Adjunct Faculty
(UT Southwestern and UT Arlington)
Ahrens, Annaswamy, Antich, Blomqvist, Bolesta, Bulla, Cadeddu, Cameron, Cook, Devous, Diller, Doller, Eberhart, Elsenbaumer, Finnegan, Franklin, Gall, Garner, Giller, Hagler, Horton, Jessen, Jester, Johnson, Kondraske, Kulkarni, Lucas, Manry, Markin, Mason, Mitchell, McColl, Peshock, Peterson, Petroll, Pollo, Sherry, St. John, Timmons, Triano, Wallace, Wang

Objectives

The Biomedical Engineering Program is jointly offered by The University of Texas at Arlington and The University of Texas Southwestern Medical Center at Dallas (UT Southwestern). Research and teaching efforts of various departments in the biological, engineering, mathematical, physical, and medical sciences of both institutions are coordinated through the Committee on Graduate Studies in Bioengineering. The goal of the program is to prepare students as biomedical engineers for productive research, development, and teaching careers in academic, industrial, hospital, or governmental positions.

The program includes coursework and research in medical imaging, artificial organs, biosensors, physiological control systems, biomedical signal processing, biomedical instrumentation, rehabilitation, orthopedics, biomechanics, biomaterials and tissue engineering, cell and molecular engineering, genomics, recombinant DNA technology, and neurosciences. Specifically, during the first year of their studies, students in the master's and doctoral programs must select one of the concentration tracks in Bioengineering: 1) Bioinstrumentation, 2) Biomaterials/Tissue Engineering, 3) Biomechanics, 4) Medical Imaging, and 5) Molecular and Computational Bioengineering. An advisor is available to advise students on the relevant courses and the research opportunities in each track.

Depending on the availability of positions with industrial partners, an internship in Dallas/Fort Worth industry prepares students for careers in the bioengineering industry.

The master's program is based upon graduate level work in Bioengineering, life sciences and related physical sciences.

The doctoral program is based upon graduate level work in Bioengineering, extensive graduate training in the life sciences and related physical sciences. The program is aimed at the development of professional biomedical engineers capable of independent research.

Admission

Application for admission should be made at either UT Arlington or UT Southwestern. Normally, the institution through which the student applies and is admitted is the student's home institution.

In addition to admission requirements of the Graduate School, the bachelor's degree held by applicants to the program may be in engineering, biological, physical, or mathematical sciences. Depending on the applicant's background, some preparatory coursework may be required, prior to admission into the program. The UT Arlington Biomedical Engineering Program uses the following guidelines in the admission review process:

Unconditional Admission

Master's Program

1. Minimum undergraduate GPA of 3.0 in the last 60 hours of undergraduate work in an engineering discipline as calculated by the Graduate School.
2. GRE quantitative score greater than 700 and a verbal score of 400 or better.
3. Three favorable letters of recommendation.
4. A TOEFL score of 575 (232 for computer-based testing) or better for international applicants whose native language is not English.

Doctoral Program

1. Minimum GPA of 3.4 in the last 60 hours taken in the major field of study of engineering or physical sciences as calculated by the Graduate School.
2. GRE quantitative score greater than 775 and a verbal score of 400 or better.
3. Three favorable letters of recommendation.
4. A TOEFL score of 575 (or 230 for computer testing) or better for international applicants whose native language is not English.

Probationary Admission

Master's Program

1. If the applicant meets any two of the above items 1, 2, and 3.
2. A TOEFL score of 575 (or 230 for computer testing) or better for international applicants whose native language is not English.

Doctoral Program

1. If an applicant meets any two of the above items 1, 2, and 3.
2. A TOEFL score of 575 (or 230 for computer testing) or better for international applicants whose native language is not English.

Provisional Admission

An applicant who is unable to supply all required documents prior to the admission deadline, but who otherwise appears to meet admission requirements may be granted provisional admission.

Deferral

If an applicant does not present adequate evidence of meeting admission requirements, the admission decision may be deferred until admission records are complete or the requirements are met.

Denial

A candidate may be denied admission if he/she has less than satisfactory performance in two out of the three admission criteria, excluding TOEFL.

Fellowship

No additional requirements besides what is published by the Graduate School.

Continuation

The Biomedical Engineering Graduate Program has established certain policies to fulfill its responsibility to graduate highly qualified professional engineers. In addition to the requirements of the Graduate School listed in this catalog under Advanced Degrees and Requirements, each bioengineering graduate student who wants to continue in the program must:

1. Maintain at least a B (3.0) overall GPA in all coursework, and
2. Demonstrate suitability for professional engineering practice.

At such time as questions are raised by bioengineering graduate faculty regarding either of the above, the student will be notified and will be provided the opportunity to respond to the Committee on Graduate Studies in Bioengineering. The Committee on Graduate Studies will review the student's performance and make a recommendation concerning the student's eligibility to continue in the program. Appeal of a decision on continuation may be made through normal procedures outlined in the section of this catalog entitled "Grievances Other than Grades."

Degree Requirements

Master of Science Degree Plans

Students in the Thesis Degree plan must take a minimum of 31 credit hours, and students in the Thesis-Substitute Degree plan must take a minimum of 33 credit hours as specified below.

Required Bioengineering: One laboratory course in Bioengineering approved by the graduate advisor such as Laboratory Principles (BE 5382) or Tissue Engineering Lab (BE 5365); BE Seminar (BE 5101).

Bioengineering: Four courses from the following list consistent with the student's track of study and approval of the Graduate Advisor: Biological Materials, Mechanics, and Processes (BE 5335); Finite Element Applications in Bioengineering (BE 5340); Biosensors and Applications (BE 5345); Modeling and Control of Biological Systems (BE 5350); Digital Control of Biomedical Systems (BE 5351); Digital Processing of Biological Signals (BE 5352); Design and Application of Artificial Organs (BE 5360); Thermoregulation and Bioheat Transfer (BE 5362); Biomaterials and Blood Compatibility (BE 5361); Introduction to Orthopedic Mechanics (BE 5331D); Orthopedic Biomaterials (BE 5332D); Tissue Engineering (BE 5364); Tissue Engineering Laboratory (BE 5365); Process Control in Biotechnology (BE 5366); Biomaterial-Living System Interactions (BE 5370).

Engineering: One course from Bioengineering or other engineering departments, with the approval of the Graduate Advisor.

Required Life Sciences: Human Physiology (BE 5309D) and one other life science course with the approval of the Graduate Advisor.

Thesis Plan: Directed Research in Bioengineering (BE 5391), re-enroll as needed; Thesis (BE 5698) at the semester in which the student expects to submit and defend the thesis.

Thesis-Substitute Plan: Master's Comprehensive Examination (BE 5293); Research Project (BE 5390), re-enroll as needed or a minimum of three hours of Biomedical Internship (6395, 6695 or 6995); and one 3-hour graduate level course from Bioengineering, life science or engineering with the approval of the Graduate Advisor.

Doctor of Philosophy Degree Plan

The Ph.D. degree program consists of a minimum of 48 credit hours beyond the bachelor's degree level (exclusive of required Ph.D. exams) and includes the courses as specified below. Course requirements differ for the Molecular and Computational Bioengineering track. See track advisor for details.

Required Bioengineering: One laboratory course in bioengineering approved by the Graduate Advisor, such as Laboratory Principles (BE 5382) or Tissue Engineering Lab (BE 5365); BE Seminar (BE 5101); Ph.D. Seminar in BE (BE 6103) for at least two semesters.

Elective Bioengineering: Six courses from: Biological Materials, Mechanics, and Processes (BE 5335); Finite Element Applications in Bioengineering (BE 5340); Biosensors and Applications (BE 5345); Modeling and Control of Biological Systems (BE 5350); Digital Control of Biomedical Systems (BE 5351); Digital Processing of Biological Signals (BE 5352); Design and Application of Artificial Or-

gans (BE 5360); Thermoregulation and Bioheat Transfer (BE 5362); Biomaterials and Blood Compatibility (BE 5361); Introduction to Orthopedic Mechanics (BE 5331D); Orthopedic Biomaterials (BE 5332D); Tissue Engineering (BE 5364); Tissue Engineering Laboratory (BE 5365); Process Control in Biotechnology (BE 5366); Biomaterial-Living System Interactions (BE 5370).

Engineering: One course from bioengineering or other engineering departments with the approval of the Graduate Advisor.

Life Sciences: Human Physiology (BE 5309D); Biochemistry (BE 5306D) or General Biochemistry I (CHEM 4311) and General Biochemistry II (CHEM 4312); Three additional life science courses are required, unless six hours are taken in Physiology or Biochemistry. Two of these courses may be Human Anatomy BE 5307D and BE 5308D. Other life science courses may also be taken with the approval of the Graduate Advisor.

Mathematics, Statistics, Computer and Physical Sciences: A course in statistics and another relevant graduate level course with the approval of the Graduate Advisor.

Ph.D. Examinations and Dissertation: All doctoral students must satisfactorily complete the following exams: Doctoral Diagnostic Examination (BE 6194), Doctoral Comprehensive Examination (BE 6195), and Dissertation (BE 6999) at the semester in which the student expects to submit and defend the dissertation.

Although qualified applicants may be accepted into the Ph.D. program without earning the Master of Science in Biomedical Engineering, all students must satisfactorily pass the Doctoral Diagnostic Examination (BE 6194). This examination will cover all relevant coursework taken by the student. The examination may be written, oral, or both and consists of a timed, written analysis of a major problem in the student's general area of research interest, followed by an oral examination covering the same material. Elements of engineering, physical and biological science, mathematics, computer science and statistics may be included in this examination.

For additional information, applicants and students should contact the BE Graduate Advisor for a copy of the "Information Brochure" for related and amplified information about the graduate program. The information can also be found at **http://www.uta.edu/biomed_eng/.**

Note: In degree plan descriptions, course numbers followed by a D are offered at UT Southwestern.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Bioengineering (BE)

5101. SEMINAR IN BIOENGINEERING (1-0). University and guest lecturers speak on topics of current interest in the field of bioengineering.

5191. DIRECTED RESEARCH IN BIOENGINEERING (1-0). Student participates in a research project under the individual instruction of a faculty supervisor.

5193. MS COMPREHENSIVE EXAMINATION (1-0). Individual instruction, directed study, consultation, and comprehensive examination over coursework leading to the Thesis-Substitute Master of Science degree in bioengineering. Graded P/F/R. Required of all Thesis-Substitute MS students.

5291. DIRECTED RESEARCH IN BIOENGINEERING (2-0). Student participates in a research project under the individual instruction of a faculty supervisor.

5293. MASTERS COMPREHENSIVE EXAMINATION (2-0). Individual instruction, directed study, consultation, and comprehensive examination over coursework leading to the Master of Science degree in bioengineering. Required of all MS students.

5300. SELECTED TOPICS IN BIOENGINEERING (3-0). Material may vary from semester to semester. May be repeated for credit if different topics are covered for each registration. Prerequisite: permission of the instructor.

5323. INTRODUCTION TO BIOPHOTONICS (3-0). Introduction to properties of light, light-cell/tissue interactions, optical techniques, and optical instrumentation, in the context of biophotonic medical applications . Topics that will be covered include fundamental properties of optical wave fields, basic properties and characterization of laser sources and detectors used in modern biomedicine, interferometery, linear and nonlinear light-tissue interactions exploited for biomedical imaging and sensing applications, and spectroscopy.

5325. FLUORESCENCE MICROSCOPY (3-0). Introduction to the anatomy of a fluorescence microscope and the physical principles of its operation. Confocal and multi-photon microscopy. Molecular imaging applications based on Forster Resonance Energy Transfer (FRET), Fluorescence Lifetime Imaging (FLIM), Fluorescence Correlation Spectroscopy (FCS), Fluorescence Recovery After Photobleaching (FRAP) and Total Internal Reflection Fluorescence (TIRF) Microscopy.

5327. TISSUE OPTICS (3-0). Introduction to the science and technology behind tissue optical imaging systems and their design requirements for different clinical applications. Diffuse optical tomography, fluorescence tomography, bioluminescence tomography, multi-modality imaging.

5329. NEURAL ENGINEERING (3-0). This course consists of both lecture/discussion and laboratory. Lecture topics include central and peripheral nervous system injury and regeneration, brain/machine interfacing, primary culture of neural cells, neuroinflammatory and neurodegenerative disease. Laboratories include embryonic and neonatal rat derived neuronal culturing, immunostaining and quantitative analysis.

5331. POLYMERS IN BIOMEDICAL ENGINEERING (3-0). This is a foundation course in polymeric biomaterial design, synthesis, characterization, and processing. The topics include design, surface-engineering, functionalization, characterization, as well as micro- and nano-fabrication of polymeric biomaterials. The biomedical applications of the polymeric biomaterials and their interaction with cell/tissue is discussed.

5333. NANOBIOMATERIALS (3-0). Synthesis, fabrication, characterization, and biomedical applications of nanobiomaterials. Topics include synthetic nanobiomaterials, biological nanobiomaterials (DNA nanomaterials, protein and peptide nanomaterials, etc.), biofunctionalization of nanobiomaterials, use of nanobiomaterials in tissue engineering, drug delivery, gene delivery.

5335. BIOLOGICAL MATERIALS, MECHANICS, AND PROCESSES (3-0). Typical functional behavior of various biological materials, flow properties of blood, bioviscoelastic fluids and solids, mass transfer in cardiovascular and pulmonary systems.

5337. TRANSPORT PHENOMENA IN BIOMEDICAL ENGINEERING (3-0). Principles of momentum, mass and heat transfer; description of blood flow, trans-capillary, interstitial, lymphatic fluid transport and pulmonary gas exchange. Applications in the design of blood oxygenator, dialysis devices, and strategies in drug delivery, hyperthermia treatment. Prerequisite: undergraduate courses in CE 2312 Statics/Dynamics, MAE 2314 Fluid Mechanics I or CE 3305 and MAE 3310 Thermodynamics I or CHEM 3321.

5340. FINITE ELEMENT APPLICATIONS IN BIOENGINEERING (3-0). The course describes the fundamental principles of the finite element method and various numerical modeling techniques. Topics include variational and Galerkin formulations, linear and Hermitian elements, accuracy and convergence. Applications in biological systems and to the design of prosthetic devices are emphasized. Topic areas include linear elasticity, fluid dynamics, heat transfer, and mass transport processes.

5344. BIOINSTRUMENTATION I (3-0). Fundamental principles of bioinstrumentation, including operational amplifiers and instrumentation amplifiers; measurements of biopotentials; signals and noise in biological systems; mechanical transducers; resistive, inductive, capacitive transducers; measurement of temperature, blood pressure and flow; electrical safety.

5345. BIOSENSORS AND APPLICATIONS (3-0). Fundamental principles of biosensors, including electrochemical and fiber-optic sensors. Topics include introduction to fabrication, miniaturization techniques, and discussion of future directions including semiconductor fabrication and nano-fabrication technology.

5346. MEDICAL IMAGING (3-0). This course introduces basic medical imaging modalities, including X-ray Computed Tomography (CT), Nuclear Medicine Imaging (PET and SPECT), Magnetic Resonance Imaging (MRI), and image-guided interventions. Through this course, the students will learn fundamental knowledge on how medical images are obtained and how they can be used for diagnosis, therapy, and surgery.

5347. PRINCIPLES OF FUNCTIONAL MAGNETIC RESONANCE IMAGING (3-0). This course introduces basic principles of Magnetic Resonance Imaging (MRI) and functional MRI (fMRI) for brain functional imaging. After taking this course, the students will gain basic knowledge on how functional brain images are obtained from MRI and fMRI as well as how they can be used for diagnosis, therapy, and surgery. The emphasis in this course is on fMRI . This course will include lecture and some laboratory exercises involving actual fMRI measurement data.

5350. MODELING AND CONTROL OF BIOLOGICAL SYSTEMS (3-0). Introduction to fundamental methods of modeling, analysis and control of biological systems. Linear system modeling, state space modeling, stability analysis, basic identification techniques. Examples from cardiopulmonary, visual, and motor control systems. Prerequisite: an undergraduate course in linear systems, control theory, or consent of the instructor.

5351. DIGITAL CONTROL OF BIOMEDICAL SYSTEMS (3-0). Design of control strategies for microprocessor-based medical equipment. Discrete and sampled data systems, Z transform, digital control design methods, stability considerations and closed loop system response. Prerequisite: an undergraduate course in control theory or consent of the instructor.

5352. DIGITAL PROCESSING OF BIOLOGICAL SIGNALS (3-0). Fundamental techniques for extraction of useful information from signals acquired from biological systems. Topics include time and frequency domain analysis, cross correlation, spectrum analysis, and convolution. Design of FIR and IIR filters for processing biological signals are described. Examples include cardiac, respiratory, and biomechanical movements. Prerequisite: an undergraduate engineering course in signals and systems analysis or consent of the instructor.

5360. DESIGN AND APPLICATION OF ARTIFICIAL ORGANS (3-0). Fundamental principles of fluid mechanics, mass transfer and chemical reaction in engineered biological systems. Simple solutions are developed for the design of artificial ventricular assist devices, total artificial hearts, lungs and kidneys.

5361. BIOMATERIALS AND BLOOD COMPATIBILITY (3-0). This course is an introduction to polymer structure and fabrication methods. Blood and tissue interactions with materials, and methods to improve the biocompatibility of materials are discussed.

5362. THERMOREGULATION AND BIOHEAT TRANSFER (3-0). This course focuses on the application of engineering analysis to problems in physiological and clinical heat transfer. Hyperthermia (including laser, electromagnetic, and ultrasound heating of tissue), hypothermia (including circulatory arrest and tissue freezing), and other applications are analyzed.

5364. TISSUE ENGINEERING LECTURE (3-0). Fundamentals of cell/extracellular matrix interactions in terms of cell spreading, migration, proliferation and function. Soft and hard tissue wound healing and nerve regeneration. Polymer scaffolding materials and fabrication methods. Cell-polymer interactions. In vitro and in vivo tissue culture and organ replacement.

5365. TISSUE ENGINEERING LAB (0-3). Each student will be given the opportunity to perform the techniques commonly used in tissue engineering and biomaterial research. These techniques are culture media preparation, cell culture/subculture, degradable scaffold preparation, scaffold modification, histological sections and staining, and cell imaging analyses.

5366. PROCESS CONTROL IN BIOTECHNOLOGY (2-3). Principles and methods of measurement, data acquisition and analysis. Application of control theory in biological systems and in biotechnology processes; control of pressure, flow, temperature, and pH. Prerequisite: an undergraduate course in control theory or consent of the instructor.

5370. BIOMATERIAL - LIVING SYSTEMS INTERACTION (3-0). This course describes current developments in molecular structure and organization at synthetic material interfaces with tissues and the subsequent influences on cells and cell membranes. It is designed to lay the groundwork for an improved understanding of events at the biomaterial-living system interface.

5372. DRUG DELIVERY (3-0). The mathematics of diffusion through various types of biological media is discussed. Diffusion of drug from many of the current delivery devices to either systemic or localized targets is mathematically modeled. Various types of drug delivery devices such as microspheres, nanoparticles, films, foams, and fibers are reviewed. Intracellular delivery and targeting is discussed. Pharmacokinetic drug distribution models are used to describe drug distributions as a function of time. Drug modifications are briefly discussed.

5373. DRUG DELIVERY LAB (3-0). This class will provide the students with hands-on experience for developing drug delivery systems such as microparticles and nanoparticles that deliver pharmaceutical agents to treat various diseases. The emphasis is on understanding the principles of pharmacokinetics and drug delivery systems to improve the clinical efficacy and reduce side effects.

5382. LABORATORY PRINCIPLES (0-9). Introduction to fundamental biomedical engineering laboratory procedures including human studies and animal surgery; includes clinical laboratory projects; data collection, analysis, and interpretation. Prerequisite: permission of the instructor.

5390. RESEARCH PROJECT (3-0). Taken by students enrolled in the non-thesis option for the MS degree. Individual instruction in research and/or instrumentation development and evaluation conducted under supervision of the instructor. A final report required. Graded P/F/R. Prerequisite: permission of the instructor.

5391. DIRECTED RESEARCH IN BIOENGINEERING (3-0). Student participates in a research project under the individual instruction of a faculty supervisor.

5398. THESIS (3-0). Prerequisite: graduate standing in biomedical engineering.

5698. THESIS (6-0). Graded P/F/R. Prerequisite: graduate standing in biomedical engineering.

6103. PhD SEMINAR IN BIOENGINEERING (1-0). Students will be assigned to participate in the journal clubs and medical grand rounds relevant to their areas of research in Bioengineering. Graded P/F only. Prerequisite: Ph.D. student status.

6194. DOCTORAL DIAGNOSTIC EXAMINATION (1-0). Individual instruction, directed study, consultation, and diagnostic examination. Required of all doctoral students in the semester when they take any portion of the diagnostic examination.

6195. DOCTORAL COMPREHENSIVE EXAMINATION (1-0). Individual instruction, directed study, consultation, and comprehensive examination on a detailed prospectus of proposed dissertation research as well as an oral examination. Required of all doctoral students in the semester when they take the comprehensive examination. Prerequisite: BE 6194.

6197. RESEARCH IN BIOENGINEERING (1-0). Individually approved research projects leading to a doctoral dissertation in the area of biomedical engineering.

6297. RESEARCH IN BIOENGINEERING (2-0). Individually approved research projects leading to a doctoral dissertation in the area of biomedical engineering.

6395. INTERNSHIP IN BIOENGINEERING (3-0). Students are placed with a bioengineering company or a hospital to gain firsthand industrial or clinical engineering experience. The company or hospital assigns projects, and a faculty member monitors the student's progress. Students register for 3 (BE 6395), 6 (BE 6695), or 9 (BE 6995) credit hours during each semester. Prerequisite: completion of at least 9 graduate credit hours in BE and good standing in the graduate program.

6397. RESEARCH IN BIOENGINEERING (3-0). Individually approved research projects leading to a doctoral dissertation in the area of bioengineering.

6399. DISSERTATION (3-0). Preparation and submission of a doctoral dissertation in an area of bioengineering. Graded R/F only. Prerequisite: admission to candidacy for the Ph.D. in Biomedical Engineering.

6499. DISSERTATION (4-0). Preparation and submission of a doctoral dissertation in an area of bioengineering. This course is only to be taken by students preparing a dissertation for submission that is supervised primarily by a University of Texas Southwestern Medical School faculty member and must be taken concurrently with a 5-hour dissertation course at that institution. To satisfy requirement that a P be awarded in a 9-hour dissertation course in their final semester of enrollment, a student must be concurrently enrolled in this course and the 5-hour dissertation course at the University of Texas Southwestern Medical School and receive a P in both courses at the end of that semester. If a P is not awarded in both classes, the two classes must be repeated until P grades are concurrently awarded.

6695. INTERNSHIP IN BIOENGINEERING (6-0). Students are placed with a bioengineering company or a hospital to gain firsthand industrial or clinical engineering experience. The company or hospital assigns projects, and a faculty member monitors the student's progress. Students register for 3 (BE 6395), 6 (BE 6695), or 9 (BE 6995) credit hours during each semester. Prerequisite: completion of at least 9 graduate credit hours in BE and good standing in the graduate program.

6697. RESEARCH IN BIOENGINEERING (6-0). Individually approved research projects leading to a doctoral dissertation in the area of bioengineering.

6699. DISSERTATION (6-0). Preparation and submission of a doctoral dissertation in an area of bioengineering. Graded R/F only. Prerequisite: admission to candidacy for the Ph.D. in Biomedical Engineering.

6995. INTERNSHIP IN BIOENGINEERING (9-0). Students are placed with a bioengineering company or a hospital to gain firsthand industrial or clinical engineering experience. The company or hospital assigns projects, and a faculty member monitors the student's progress. Students register for 3 (BME 6395), 6 (BME 6695), or 9 (BME 6995) credit hours during each semester. Prerequisite: completion of at least 9 graduate credit hours in BE and good standing in the graduate program.

6997. RESEARCH IN BIOENGINEERING (9-0). Individually approved research projects leading to a doctoral dissertation in the area of bioengineering.

6999. DISSERTATION (9-0). Preparation and submission of a doctoral dissertation in an area of bioengineering. Graded P/R/F. Prerequisite: admission to candidacy for the Ph.D. in Biomedical Engineering.

Courses offered at The University of Texas Southwestern Medical Center at Dallas (UT Southwestern):

BE 5300D. Special Topics in Bioengineering
BE 5396D. Individual Laboratory Projects
BE 5363D. Digital Processing of Medical Images
BE 5306D. Biochemistry
BE 5307D. Human Anatomy Lectures
BE 5308D. Human Anatomy Laboratory
BE 5309D. Human Physiology
BE 5331D. Introduction to Orthopedic Mechanics
BE 5332D. Orthopedic Biomaterials.
BE 5680D. Mammalian Physiology

See the UT Southwestern Graduate Catalog for course descriptions.

Combined Degree Plan: Bachelor of Science in Biology and Master of Science in Biomedical Engineering

This five-year curriculum prepares students for careers in the fast growing biotechnology and Bioengineering industries. The curriculum also prepares students for medical school and advanced study. Students are required to take courses from engineering, life sciences and liberal arts, culminating in a five-year Master of Science Degree in Biomedical Engineering, including a Bachelor of Science Degree in Biology. The curriculum is offered jointly by the College of Engineering and the College of Science.

Description

Bioengineers use quantitative methods and innovation to analyze and to solve problems in biology and medicine. Students choose the Bioengineering field to serve people, to partake in the challenge and excitement of working with living systems, and to apply advanced technology to complex problems of medical care. Through this program, students learn the essentials of life science, engineering theory, and the analytical and practical tools that enable them to be successful in the biotechnology and Bioengineering industries. The program includes coursework in the basic sciences, core engineering, Bioengineering, and advanced biotechnology disciplines. Both didactic classroom lectures and hands-on laboratory experience are emphasized. Additionally, students are required to take general educational courses in literature, fine arts, history, political science, and social science.

Career Opportunities

The program prepares students as biomedical engineers for careers in industry, in hospitals, in research facilities of educational and medical institutions, and in government regulatory agencies. It also provides a solid foundation for those wishing to continue for advanced degrees. For those planning to pursue a medical degree, this cross-disciplinary curriculum offers a solid foundation in engineering, which is an advantage in preparing for a medical career.

See the UT Arlington Undergraduate Catalog for a more detailed description of this program.

Department of Civil Engineering

www.uta.edu/ce

Area of Study and Degrees
Civil Engineering
M.S., M.Engr., Ph.D.

Master's Degree Plans
Thesis (M.S.) and Non-Thesis (M.Engr.)

Chair
Nur Yazdani
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817.272.5055

Graduate Advisor
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Graduate Faculty
Professors
Ardekani, Matthys, Puppala, Williams, Yazdani

Associate Professors
Abolmaali, Hoyos, Kruzic, Mattingly, Romanoschi

Assistant Professors
Chao, Hossain, McEnery, Najafi, Ramirez, Sattler

Professor and President Emeritus
Nedderman

Professors Emeritus
Everard, Parker, Qasim

Objective

The objective of the graduate program in civil engineering is to prepare students for continued professional and scholarly development consistent with their technical interests. Students, with the assistance of a faculty advisor in their area of interest, plan their programs of study in one of the technical areas in civil engineering. Typical program and research areas are:

1. Environmental (water and air quality control, and solid and hazardous materials control);
2. Geotechnical (soil mechanics and foundations);
3. Infrastructure Systems;
4. Structures and Applied Mechanics;
5. Transportation (traffic planning, highways, airports and transit);
6. Water Resources (hydrology and hydraulics);
7. Construction Engineering; and,
8. Construction Management.

The department provides the student an opportunity to study advanced and special topics that are on the forefront of technology. These courses carry CE 5300 or CE 6300 numbers and are identified on a student's academic record by both number and course title. Examples of topics offered in the typical program areas are:

Construction Engineering - Design of Construction Operations, Pipeline & Utility Design, Construction and Renewal, Principles of Asset Management & Sustainability;

Construction Management - Principles of LEAN and LEED Construction, Cost Accounting and Scheduling;

Environmental - Advanced Dispersion Modeling, Analysis of Pollutant Characteristics, Hazardous Waste Remediation;

Geotechnical - Expansive Clays, Soil Chemical Stabilization;

Infrastructure Systems - Civil Engineering systems to transport people, goods, water, waste disposal, energy and information;

Structures and Applied Mechanics - Advanced materials and methodology in structural engineering;

Transportation - Intelligent Transportation Systems, Network Modeling, Urban Operations Research, Vehicular Energy Consumption and Emissions, Transit and Paratransit, Intermodal Systems;

Water Resources - Kinematic Wave Theory, Urban Hydrology, Distributed Modeling, Physical Modeling, and Boundry Layer Theory.

Masters (M.S. and M.Engr.) Student Learning Outcomes

Fundamental Knowledge: Graduates will have extensive basic and applied knowledge in their selected Civil Engineering Program (CEP) interest area.

Independent Abilities: Graduates will have the ability to conduct independent and original study ranging from gathering of information to application, analysis, creation, documentation of the study, and its resolution.

Critical Thinking: Graduates will have extensive breadth and ability to critique and synthesize literature, review results and to apply this knowledge in developing new ideas, in designing and evaluating scientific investigations, and in assessing, interpreting and understanding data relating to their selected CEP interest area.

Advanced Knowledge: Graduates will demonstrate extensive mastery of the subject matter at a deeper theoretical and applied level beyond the fundamental knowledge gained in his/her undergraduate course sequence.

Effective Communication: Graduates will have the ability to present scientific results in both written and oral format in various forums including thesis defense, master's defense, project reports, manuscripts, professional society meetings, journals, and performing class lectures, presentations, and reports.

Professional Development: A student graduating with a master's degree in civil engineering is expected to demonstrate interest in pursuing life long learning by attaining professional licenses, and obtaining professional development hours by attendance at conferences, higher educational classes, short courses and seminars, conducting classes, and publishing.

Ph.D. Student Learning Outcomes

Fundamental Knowledge: Graduates will command profound basic and applied knowledge in their specialty area within their Civil Engineering Program (CEP) interest area.

Independent Abilities: Graduates will have the ability to conduct a major independent and original research study that includes gathering of information, gaining an understanding of the process of academic or commercial exploitation of research results, demonstrating an understanding of contemporary research issues, effective project management, synthesis and evaluation, and appropriate dissemination of research findings.

Critical Thinking: Graduates will have a profound ability to critique and synthesize literature, review results and to apply knowledge gained from literature to develop new ideas, to design and evaluate scientific investigations, and to assess, interpret and understand data related to their specialty area within their CEP interest area.

Advanced Knowledge: Graduates will demonstrate profound mastery of the subject matter at a deeper theoretical and applied level well beyond fundamental knowledge gained in the undergraduate course sequence and the higher-level knowledge gained in the master's level course sequence.

Effective Communication: Graduates will have the ability to construct coherent arguments and articulate ideas clearly to an audience, through a variety of techniques, constructively defend research outcomes, justify their research to the profession and promote the public understanding of their research fields.

Professional Development: A student graduating with a doctoral degree in civil engineering is expected to demonstrate interest in pursuing life long learning by attaining professional licenses, and obtaining professional development hours by attendance at conferences, higher educational classes, short courses and seminars, conducting classes, and publishing.

Admission

CE Master's Program

Unconditional Admission

A student must meet the following requirements for unconditional admission:

- A Bachelor's Degree in Civil Engineering (Applicant with an appropriate Bachelor's Degree in another discipline is considered, subject to satisfactory completion of deficiency courses for area of interest.)
- An undergraduate GPA of 3.0 on a 4.0 scale, as calculated by the Graduate School, is typical of a successful applicant.
- A Graduate Record Exam (GRE) Quantitative score of 600 or higher is typical of a successful applicant.
- A Graduate Record Exam Verbal score of 450 or higher is typical of a successful applicant.
- For applicants whose native language is not English, a minimum score of 558 on the written Test of English as a Foreign Language (TOEFL), 220 on the computer TOEFL, 83 on TOEFL iBT, 40 on the TSE-A, 50 on the SPEAK, 450 on Verbal GRE, 85 on METLAB (Michigan English Language Assessment Battery), or 7 on the IELTS (International English Language Testing System). (METLAB and IELTS are used only when other tests are not available in the applicant's country.)
- Favorable letters of recommendation from people familiar with the applicant's academic work.
- Statement of Purpose or Research Interest.

Probationary Admission

If applicants do not meet a majority of standards for unconditional admission outlined above, they may be considered for probationary admission after careful examination of their application materials. Probationary admission may require that the applicant receive a B or better in at least their first 9 hours of graduate coursework applicable to their degree being sought at UT Arlington, take additional English courses, and/or deficiency courses as required.

Provisional Admission

An applicant unable to supply all required documentation prior to the admission deadline, but whom otherwise appears to meet admission requirements may be granted provisional admission.

Deferred Admission

A deferred application decision may be granted when a file is incomplete or when a denied decision is not appropriate.

Denial of Admission

A candidate may be denied admission if they have less than satisfactory performance on a majority of the admission criteria described above.

Waiver of GRE Admission

A waiver of the GRE may be considered for a UT Arlington graduate who has completed an undergraduate degree within the past 3 years from normal undergraduate feeder program for CE degree. Students must complete the last 60 hours of study and in all undergraduate coursework completed at UT Arlington. The student must comply with all other requirements for admission to the Graduate School, i.e., submitting application, paying fees, providing required transcripts, letters of reference, etc. The applicant's record will be assessed for evidence of strengths relevant to success in the Civil Engineering graduate program. Meeting the minimum GPA requirement shall not be the sole determinant for granting a waiver.

Facilitated Admission of Outstanding UT Arlington Undergraduates

Facilitated Admission may be considered for a student who has graduated from UT Arlington no more than one academic year prior to proposed entrance to the graduate program. Students must complete the last 60 hours of study at UT Arlington. The student's UT Arlington GPA must equal or exceed 3.5 in the last 60 hours of undergraduate study and all undergraduate coursework completed at UT Arlington. The applicant's record will be assessed for evidence of strengths relevant to success in the Civil Engineering graduate pro-

gram. Meeting the minimum GPA requirement shall not be the sole determinant for granting facilitated admission.

Departmental Scholarships and Fellowships

Students that are unconditionally admitted will be eligible for available scholarship and/or fellowship support. Award of scholarships or fellowships will be based on consideration of the same criteria utilized in admission decisions. To be eligible, candidates must have a GPA of 3.0 in their last 60 undergraduate credit hours (if entering Graduate School within one year of being granted a Bachelor Degree) plus any graduate credit hours as calculated by the Graduate School. Recipients must maintain at least a 3.0 overall GPA, and must be enrolled in a minimum of 6 hours of coursework in both long semesters to retain their scholarships and/or fellowships. Additional requirements may be imposed by the department selection committee.

CE Doctoral Program

Unconditional Admission

A student must meet the following requirements for unconditional admission:

- A Master's Degree or at least 30 hours of graduate coursework in Civil Engineering. (Applicant with a Master's Degree in another discipline is considered, subject to satisfactory completion of deficiency courses for the CE area of interest.)
- No specific GPA requirement (application considered as a whole). However, a graduate coursework GPA of 3.5 on a 4.0 scale, as calculated by the Graduate School, is typical of a successful applicant.
- A Graduate Record Exam (GRE) Quantitative score of 700 or higher is typical of a successful applicant.
- A Graduate Record Exam Verbal score of 500 or higher is typical of a successful applicant.
- For applicants whose native language is not English, a minimum score of 558 on the written Test of English as a Foreign Language (TOEFL), 220 on the computer TOEFL, 83 on TOEFL iBT, 40 on the TSE-A, 50 on the SPEAK, 500 on Verbal GRE, 85 on METLAB (Michigan English Language Assessment Battery), or 7 on the IELTS (International English Language Testing System). (METLAB and IELTS are used only when other tests are not available in the applicant's country.)
- Favorable letters of recommendation from people familiar with the applicant's academic work and/or professional work.
- Statement of Purpose or Research Interest.

Probationary Admission

If applicants do not meet a majority of standards for unconditional admission outlined above, they may be considered for probationary admission after careful examination of their application materials. Probationary admission may require that the applicant receive a B or better in at least their first 9 hours of graduate coursework applicable to their degree being sought at UT Arlington, take additional English courses, and/or deficiency courses as required.

Provisional Admission

An applicant unable to supply all required documentation prior to the admission deadline, but whom otherwise appears to meet admission requirements may be granted provisional admission.

Deferred Admission

A deferred application decision may be granted when a file is incomplete or when a denied decision is not appropriate.

Denial of Admission

A candidate may be denied admission if they have less than satisfactory performance on a majority of the admission criteria described above.

Departmental Scholarships and Fellowships

Students that are unconditionally admitted will be eligible for available scholarship and/or fellowship support. Award of scholarships or fellowships will be based on consideration of the same criteria utilized in admission decisions. To be eligible, candidates must have a GPA of 3.0 in their graduate credit hours. Recipients must maintain at least a 3.5 overall graduate GPA in courses taken as a doctoral student and enroll in a minimum of 6 hours of coursework in both long semesters to retain their scholarships and/or fellowships. Additional requirements may be imposed by the department selection committee.

Grade Requirements and Continuation

The Civil Engineering Graduate Program has established rules, regulations, policies, and procedures for continuation in the graduate program and fulfilling graduation requirements. These can be found in the Civil Engineering Graduate Handbook available in the Civil Engineering Office. In addition to the requirements of the Graduate School listed elsewhere, to continue in the program each civil engineering graduate student must:

- Maintain an overall GPA of 3.0 or higher for the Master's program and 3.5 or higher for the Ph.D. program in all coursework undertaken and all coursework on his/her approved program of study.
- Accumulate no more than three deficiency points as defined below.

A student will be declared ineligible for further graduate study in civil engineering and will be dismissed from the civil engineering graduate program if he/she accumulates grade deficiency points greater than three. Any grade of C is one deficiency point, any grade of D is two deficiency points, and any grade of F is three deficiency points. Deficiency points may not be removed from the student's record by repeating a course or by completing additional coursework.

No organized course in which a grade of P is received can be used to satisfy course requirements for a graduate degree in civil engineering.

Degree Requirements

The responsibility rests with each student for knowing the rules, regulations, and filing deadlines of the Graduate School and the Civil Engineering Committee on Graduate Studies (see Civil Engineering Graduate Handbook available in Civil Engineering Office). Requirements of the Graduate School and the Civil Engineering Committee on Graduate Studies must be met. The degrees offered and minimum course requirements are identified in the following paragraphs.

The Master of Science degree is a research-oriented program in which completion of a thesis is mandatory. The program consists of a minimum of 24 credit hours of coursework and an acceptable thesis (six credit hours). The Master of Engineering degree is an engineering practice-oriented program requiring a minimum of 36 credit hours. A maximum of six hours may be a special project. A final program examination is required of all master's degree candidates. Thesis degree candidates will be required to present an oral defense of the thesis. Non-thesis degree candidates will fulfill the program examination requirement upon the successful completion of CE 5193, Master's

Comprehensive Examination. Candidates must enroll in CE 5193 in the semester they intend to graduate.

The Ph.D. degree is a research degree and, as such, requires the candidate to successfully carry out original, independent research in an area acceptable to the civil engineering faculty. Normally, a minimum of one year of advanced coursework beyond the master's degree is required.

Dual Program Degree

Students in the Civil Engineering program may participate in a dual degree program whereby they can earn a Master's Degree in Civil Engineering and a Master of City and Regional Planning. By participating in a dual degree program, students can apply a number of semester hours jointly to meet the requirements of both degrees, thus reducing the total number of hours required to earn both degrees separately. The number of hours that may be jointly applied ranges from six to 18 hours, subject to the approval of each program's Committee on Graduate Studies and Graduate Advisor. Those interested in the dual degree program should consult the appropriate graduate programs for further information on course requirements, including information regarding which courses are suitable for joint application of credit hours.

To participate in the dual degree program, students must make a separate application to each program, be accepted by each program, and must submit separate Programs of Work for each degree showing only courses that meet requirements for the specified degree, including those joint courses that meet requirements for both degrees. A student must be admitted to the second program before completing more than 15 semester hours in the first, exclusive of leveling, deficiency, or foundation courses, and must complete the second degree within one academic year following completion of the first. See also the statement on "Dual Degree Programs" in the general admission section of this catalog.

Undergraduate Coursework Credit

A limited number (not to exceed a total of nine semester hours) of the following courses may be applicable toward a graduate degree if approved in advance by the Civil Engineering Graduate Advisor.

4311. URBAN TRANSPORTATION INFRASTRUCTURE PLANNING
4312. STREET AND HIGHWAY DESIGN
4313. TRAFFIC ENGINEERING
4321. FOUNDATION ENGINEERING
4322. APPLICATIONS WITH GEOSYNTHETICS
4324. MECHANICS OF MATERIALS II
4325. INTRODUCTION TO FINITE ELEMENT METHOD
4332. CONSTRUCTION METHODS AND MANAGEMENT
4333. INFRASTRUCTURE ENVIRONMENTAL PERMITTING
4334. CONSTRUCTION CONTRACTS AND SPECIFICATIONS
4336. HOT MIX ASPHALT DESIGN AND CONSTRUCTION
4337. PORTLAND CEMENT CONCRETE PAVEMENTS
4348. STRUCTURAL DESIGN IN METALS
4350. AIR POLLUTION CONTROL ENGINEERING
4356. DESIGN OF MUNICIPAL WATER SUPPLY SYSTEMS
4357. DESIGN OF MUNICIPAL WASTEWATER TREATMENT SYSTEMS
4358. OPEN CONDUIT SYSTEM

Civil Engineering (CE)

5191. ADVANCED STUDIES IN CIVIL ENGINEERING (1-0). Individual studies of advanced topics under the supervision of a professor or professors. Prerequisite: consent of instructor.

5193. MASTER'S COMPREHENSIVE EXAMINATION (1-0). Directed study, consultation, and comprehensive examination over coursework leading to the Master of Engineering degree in civil engineering. Required of all Master of Engineering students in the semester they plan to graduate.

5300. TOPICS IN CIVIL ENGINEERING (3-0). Topics of current interest in the field of civil engineering. The subject title is listed in the class schedule and in the student's record. Topics vary. May be repeated for credit when topic changes. Prerequisite: consent of instructor.

5301. ENERGY METHODS (3-0). Principles of mechanics; elastic beams and frames; variational method: curved cantilever beams; Rayleigh Ritz method; special form of Euler equation; differential equation for beam; variation of double integral; first variation of triple integral. Deformable bodies using indicial notation; buckling using energy method; Lagrange and Hamilton Principles; theory and analysis of plates; theory of buckling; and theory of vibration. Prerequisite: consent of instructor.

5302. PLAIN CONCRETE (3-0). Basic properties and interactions of hydraulic cements and mineral aggregates in concrete. Properties of plastic and hardened concrete and modifications through the use of admixtures. Issues and specifications in production, handling, and placement problems. Other topics will include quality control and acceptance testing; lightweight, heavyweight, and other special concretes.

5303. INTRODUCTION TO FINITE ELEMENT (3-0). Stiffness method using basic equations and virtual work; element equations using shape functions for axial, beam, frame, two dimensional elements; stiffness method for three dimensional structures. Flexibility method; finite element modeling and optimization of idealized structures. Prerequisite: CE 3341.

5304. LIGHT GAGE STEEL DESIGN (3-0). Covers structural design issues for cold formed steel structures. Includes initial buckling and post buckling, stiffened and unstiffened plate behavior, braced and unbraced beams, columns, connectors and shear diaphragms. Building Codes and related practice documents. Prerequisite: CE 4848.

5305. FIBER REINFORCED COMPOSITE DESIGN (3-0). Introduction to basic analysis, design and manufacture of composite materials for engineered structures. Fiber materials, tapes, cloths, resin systems, elastic constants, matrix formulation, theory of failure. The course will also cover an introduction to design with composites, preliminary design, optimization, processing variables, product design. Prerequisite: CE 3341.

5306. STRUCTURAL STEEL DESIGN (3-0). The basic design course for steel structures emphasizing Load Resistant Factor Design Method. Topics include tension members, compression members, flexural members, and simple connections. Building Codes and related documents. Credit not granted for both CE 5306 and 4348. Prerequisite: CE 3341.

5307. STRUCTURAL TIMBER DESIGN (3-0). Covers material grade, properties of wood, design criteria using structural lumber, glue laminated lumber and structural panels. Design of bending and compression members, trusses and shear diaphragms. Building Codes and related documents. Prerequisite: CE 3341.

5308. STRUCTURAL MASONRY DESIGN (3-0). Covers masonry unit type and grades of mortar types, reinforcing and connectors. Design of beams, columns, pilasters, and walls. Structural behavior and

construction practices. Includes plain and reinforced masonry. Building Codes and recommended practice documents. Prerequisite: CE 3341.

5309. PRESTRESSED CONCRETE (3-0). Introduction to pretensioned and post-tensioned concrete structures, hardware, stress calculations, section proportioning, flexural design, shear design, prestress losses, deflections, allowable stress, load-balancing, and ultimate strength design/analysis methods, including: partially prestressed systems shear design, analysis and design of composite beams, design of prestressed concrete bridges. Both American Concrete Institute (ACI) and American Association of State Highway and Transportation Officials (AASHTO) provisions will be discussed. Prerequisite: CE 4347.

5311. ADVANCED STEEL DESIGN I (3-0). Covers torsional design of beams, beams with web holes, composite design of beams, lateral-torsional buckling of beams, plate buckling, column design and behavior, frame stability, bracing requirements for compression members. Prerequisite: CE 4348 or CE 5306.

5312. ADVANCED CONCRETE DESIGN I (3-0). Includes structural design of slender columns, walls, truss model for shear and torsion; structural systems such as continuous beams, two-way slabs, yield-line theory and shear friction. Behavior of reinforced concrete structures, with emphasis on ductility and detailing of frames, slabs, and detailing for seismic loads will be covered. Prerequisite: CE 4347.

5314. ADVANCED STEEL DESIGN II (3-0). Covers structural design of beam columns and building connections. Rigid frame and multi-story building design issues. Building Codes and related documents. Prerequisite: CE 4348 or 5306.

5315. ADVANCED MECHANICS OF MATERIALS (3-0). Analysis of stresses and strains at a point, stress-strain relationships, stresses due to various leading conditions, theories of failure, energy methods, shear center, unsymmetrical bending, curved beams, torsion and buckling problems. Credit not granted for both CE 5315 and CE 4324. Prerequisite: CE 2313.

5316. WATER SUPPLY AND TREATMENT PLANT DESIGN (3-0). Theory and design of community water supply systems. Design of treatment facilities, equipment selection and distribution network, and cost estimates. Credit not granted for both CE 4356 and 5316. Prerequisite: CE 3131 and 3334, or consent of instructor.

5317. WASTEWATER TREATMENT PLANT DESIGN (3-0). Effluent quality standards, and theory and design of wastewater treatment plants. Design and layout of wastewater treatment systems using manufacturers' catalogs, and cost estimates. Credit not granted for both CE 4357 and 5317. Prerequisite: CE 3131 and 3334, or consent of instructor.

5318. PHYSICAL-CHEMICAL PROCESSES I (3-0). Principles of unit process modeling using reactor and kinetic theory, and theory and design of mixing, flocculation, sedimentation, filtration, gas transfer, adsorption, ion exchange, and disinfection. Prerequisite: CE 3131 and 3334, or consent of instructor.

5319. PHYSICAL-CHEMICAL PROCESSES II (3-0). Principles of water chemistry applied to the theory and design of unit processes including coagulation, precipitation, corrosion, oxidation-reduction, and membrane processes. Prerequisite: CE 3131 and 3334, or consent of instructor.

5320. SOLID WASTE MANAGEMENT (3-0). Technical aspects of current practices and new developments in the management of solid waste facilities. Theory and design of solid waste collection, transfer, disposal and recovery, and reuse systems. Prerequisite: CE 3131 and 3334, or consent of instructor.

5321. ENGINEERING FOR ENVIRONMENTAL SCIENTISTS (3-0). Fundamental principles of engineering science applicable to the comprehension and design of engineered environmental systems. Includes water and air quality indices; kinetic and reactor theory; mass and energy balances; fluid system theory; and applications of physical, chemical and biological processes in the design of engineered environmental systems. May not be used to satisfy any of the requirements for a graduate degree in Civil Engineering. Prerequisite: PHYS 1441, CHEM 1442, MATH 2425.

5322. AIR POLLUTION CHEMISTRY AND METEOROLOGY (3-0). Designed to give students an understanding of how pollutants react and travel in the atmosphere. Topics include: chemistry of ground-level ozone formation, ozone layer depletion, acid deposition, fine particle formation, and climate change; meteorological variables impacting pollutant concentrations in the atmosphere, such as atmospheric stability, turbulence, and wind speed. Prerequisite: CE 5328 or consent of instructor.

5323. AIR QUALITY MODELING (3-0). Mathematical models for predicting air pollutant transport and transformation in Dispersion models are mathematical tools for predicting air pollutant concentrations, based on meteorology and sometimes chemistry, to evaluate health impacts. Topics include: basic Gaussian dispersion equation; meteorological factors affecting dispersion; stability parameters; plume rise; dispersion equation with chemical reactions/deposition; dispersion from linear sources (roadways); software; and case study. Prerequisite: CE 5328 or consent of instructor.

5324. TRANSPORTATION AND AIR QUALITY (3-0). Generation of pollutants in gasoline and diesel engines. Emission estimation via measurement and modeling (MOBILE 6). Prediction of pollutant concentrations near roadways. Vehicle emission control using alternative engine design, alternate fuels, add-on technology. Travel demand management and transportation control measures for emission reduction.

5325. BIOLOGICAL PROCESSES (3-0). Biological processes used in water quality control. Includes principles from microbiology and biochemistry applied to suspended and attached growth systems. Prerequisite: CE 5318.

5327. AIR POLLUTION CONTROL SYSTEM DESIGN (3-0). Design of gaseous and particulate control systems, including incinerators, adsorption systems, absorption systems, biofilters, cyclones, electrostatic precipitators, fabric filters and wet scrubbers. Prerequisite: CE 5328 or consent of instructor.

5328. FUNDAMENTALS OF AIR POLLUTION (3-0). An introduction to the air pollution field including: atmosphere and ideal gas law; pollutant types, sources, effects; Clean Air Act; air pollution measurement; overviews of air pollution meteorology, dispersion modeling, air pollution control, and mobile sources; international air pollution; and indoor air quality. Credit not granted for both CE 5328 and 4350. Concurrent enrollment in CE 3334 or CE 5321 or consent of instructor.

5329. ENVIRONMENTAL RISK BASED CORRECTIVE ACTION (3-0). Process for the assessment and response to contamination; integrating risk and exposure practices to ensure protection of human health and environment. Includes characterization, EPA tier approach, general aspects of toxicology, dose exposure, pathways, receptors, migration and risk assessment. Prerequisite: consent of instructor.

5330. CHARACTERISTICS OF TRAFFIC (3-0). The fundamental elements of traffic—the driver, the vehicle, and the roadway—are considered and then extended into studies of streams of traffic flow. Techniques of conducting traffic engineering studies, including methods of measuring speed, volume, and density, are covered along with methods for the determination of capacity on freeways and rural highways (uninterrupted flow facilities). Parking and accident studies are also included. Prerequisite: CE 3302; and CE 3301 or concurrent registration therein.

5331. TRAFFIC ENGINEERING OPERATIONS (3-0). Methods of traffic regulation and control optimization. Traffic laws, motorist communication by means of traffic control devices, and the design and operation of both fixed time and actuated traffic signals at intersections. Analysis and design techniques for intersections using capacity and level of service concepts. Credit will not be granted for both CE 4313 and 5331. Prerequisite: CE 3302 and CE 3301 or concurrent registration therein.

5332. HIGHWAY DESIGN (3-0). Geometric considerations necessary for the design of city streets, highways, and freeways such as the cross sections, vertical and horizontal alignment, sight distances and stopping distances. Includes the design of maneuver areas, channelization, ramps, intersections, and interchanges. Credit will not be granted for both CE 4312 and 5332. Prerequisite: CE 3302.

5333. TRAFFIC CONTROL SYSTEMS (3-0). Control algorithms and optimization of splits, offsets, and cycle lengths for arterial progression and traffic signals in networks; computer simulation techniques; problem solving with computer simulation and optimization packages; freeway control using ramp meters and dynamic motorist communications. Prerequisite: CE 4313 or CE 5331.

5335. AIRPORT ENGINEERING (3-0). Airport master planning, for forecasting air travel demand, airside capacity, passenger terminal design, air traffic control, land access planning and design, landside operations, air cargo facility design. Prerequisite: CE 3302.

5336. PAVEMENT DESIGN (3-0). Principles and theoretical concepts of rigid and flexible pavements for highways and airfields; effects of traffic loads, natural forces, and material quality; current design practices; and live cycle cost analysis. Prerequisite: CE 3302, 3261, and 3343.

5337. URBAN TRANSPORTATION PLANNING (3-0). Theory and application of a comprehensive urban transportation planning methodology. Basic studies of population dynamics, urban growth, land use, forecasting trip generation and distribution, traffic assignment, mode split, evaluation, simulation models, characteristics of mass transit and other non-auto modes, and system design and evaluation. Credit will not be granted for both CE 4311 and 5337. Prerequisite: CE 3301 and CE 3302 or consent of instructor.

5338. SYSTEM EVALUATION (3-0). Techniques necessary to perform economic and multi-criteria evaluations of civil engineering projects. These will be used to assess the strengths and weaknesses of different decision-making strategies and analyze contemporary topics and case studies in making civil engineering decisions. Prerequisite: IE 3312 or equivalent.

5344. CONSTRUCTION METHODS: FIELD OPERATIONS (3-0). Introduction to the methods, equipment, and management techniques used in the construction industry. Topics include equipment operating characteristics, job site safety, and field management. Credit not granted for both CE 5344 and 4332. Prerequisite: CE 3343.

5345. INFRASTRUCTURE EVALUATION, MAINTENANCE, AND REHABILITATION (3-0). This course is designed for engineers and managers involved in infrastructure development, sustainability, and replacement. Topics include asset management, inspection, evaluation, maintenance and rehabilitation alternatives for water distribution, waste and water collection, surface and subsurface drainage, pavements, bridges, culverts, buildings, and other structures. Prerequisite: consent of instructor.

5346. OPEN CHANNEL FLOW (3-0). Open channel hydraulic principles, flow classification, backwater curves, transitions, obstructions, bends, flood flow computations, and urban watershed applications. Credit not granted for both CE 4358 and 5346. Prerequisite: CE 3305 or consent of instructor.

5347. ADVANCED HYDROLOGY (3-0). Elements of hydrometeorology, infiltration, soil moisture, hydrographs, rainfall runoff relationships, and effects of these factors with regard to water resources, urban watersheds, flood control, and environmental issues. Prerequisite: CE 3309 and CE 4328.

5348. GROUNDWATER HYDROLOGY (3-0). Hydrology and hydrogeology of groundwater to include aquifer and vadose properties and measurements, basic flow systems and solutions, well systems, elementary contaminate transport, water quality, recharge, subsidence, flow system analysis, flow nets, and leaky aquifers. CE 3309 or consent of instructor.

5351. ADVANCED THEORY OF STRUCTURES (3-0). Classical analysis of indeterminate beam, frames, and trusses. Analysis of single suspension systems; cable stayed structures; and nonlinearity of cable suspension systems. Analysis of structures for temperature loading; plastic analysis of structures; yield line analysis; and large deformation analysis. Analysis of arches and suspension systems: two hinged arches and fixed arches. Prerequisite: CE 3341.

5354. WATER RESOURCES PLANNING (3-0). Historical and current water development concepts. Administrative and allocation concerns. General principles and procedures of water resource planning includes regional, multipurpose, economic and systems considerations. Prerequisite: CE 3309, CE 3301 or consent of instructor, and IE 3312 or equivalent.

5355. ENVIRONMENTAL PERMITTING (3-0). Overview of environmental law and regulations and permit development critical to design and construction, such as Stormwater Pollution Prevention and Planning, Environmental Impact (Statements, Assessments and Exclusion), Nationwide Permits, USA COE Permits and related screening models. Credit not granted for both CE 5355 and 4333. Prerequisite: CE 3334 or consent of instructor.

5356. SURFACE WATER QUALITY MODELING (3-0). Contaminant transport and fate in surface water. Engineering methods assessing surface water and transport for water and sediment quality. Modeling dissolved oxygen, chemicals, waterborne substances. Prerequisites: CE 5319 and CE 5346.

5357. HYDROLOGIC TECHNIQUES (3-0). A study of current hydrologic techniques and methods for the analysis of hydrologic variables necessary in the design of projects such as bridges, culverts, reservoirs. Techniques involve extreme value statistics, model hydrographs, deterministic and stochastic methods for data analysis. Prerequisite: CE 5357 or consent of instructor.

5358. HAZARDOUS WASTE MANAGEMENT (3-0). Sources, chemistry, monitoring, and classifications of hazardous wastes. Discussions of environmental hazards, legal aspects, transportation, detoxification, storage, and disposal and incineration. Prerequisite: CE 3334 or CE 5321 or consent of instructor.

5359. GROUNDWATER CONTAMINANT MODELING (3-0). Study of sources and fates of contamination in groundwater. Mathematical modeling of reactive and nonreactive pollutant movement. Aquifer restoration strategies. Prerequisites: CE 5319 and CE 5348.

5361. DESIGN AND CONSTRUCTION OF ASPHALT CONCRETE (3-0). An in-depth study of the properties of constituent materials for asphalt concrete mixtures. Design methods for Hot-Mixes Asphalt (HMA) and Stone Matrix Asphalt (SMA). Theory and practice of asphalt concrete mix for pavements, including specifications and construction methods for hot-mix asphalt and surface treatments. Maintenance and rehabilitation of flexible pavements. Relationships of material engineering properties to pavement design and performance. Credit not granted for both CE 5361 and CE 4336. Prerequisite: CE 3261.

5362. RIGID PAVEMENTS (3-0). Portland cement concrete mix design and production. Paving operations. Saw and seal operations. Subgrade preparation. Base selection. Drainage selection, design and construction. Bonded and unbonded concrete overlays. Whitetopping and Ultra-Thin Whitetopping. Concrete pavement restoration; Quality Assurance and Quality Control in Concrete Pavement Construction. Credit not granted for both CE 5362 and CE 4337. Prerequisite: CE 3261 or equivalent.

5363. CONSTITUTIVE MODELING OF SOILS (3-0). Fundamental aspects of elasto-plastic behavior of soils along axisymmetric stress paths, shear strength of soils in light of critical state soil mechanics, and constitutive models to predict soil response under saturated and partially saturated conditions, including Cam Clay and modified Cam Clay models. Prerequisite: CE 3343 or consent of instructor.

5364. FOUNDATION ANALYSIS AND DESIGN (3-0). The design, construction, and performance of footings, rafts, and piles founded on or in sands, clays, silts, stratified soils, and weak rock. Includes the influence of various geologic terrain on selecting foundation type and constructability, in-situ investigations to determine material design parameters, bearing capacity, and settlement of foundations. Credit not granted for both CE 5364 and 4321. Prerequisite: CE 3343.

5365. THEORETICAL SOIL MECHANICS (3-0). Theory of consolidation, magnitude, time rate, pore pressure dissipation with variable construction rate and layered soils. Secondary compression, preconsolidation, and preloading. Shear strength of soil. Critical state soil mechanics, dilation and strain-softening in drained shear, pore pressure response in undrained shear, including static liquefaction. Prerequisite: CE 3343 or consent of instructor.

5366. SOIL DYNAMICS (3-0). Fundamental aspects of mechanical behavior and characterization of soils and earth structures subjected to dynamic loads, including wave propagation in soils, dynamic soil properties, liquefaction of soils, dynamic bearing capacity of shallow foundations, seismic design of retaining walls, and seismic slope stability. Prerequisite: CE 2210 and CE 3343 or consent of instructor.

5367. DESIGN OF EARTH STRUCTURES (3-0). Study of the states of stress and analysis techniques associated with cuts, fills, and retaining structures. Includes slope stability, embankment reinforcement, conventional and reinforced earth retaining walls, excavation bracing, and sheet pile wharf structures. Prerequisite: CE 3343 or consent of instructor.

5368. UNSATURATED SOIL MECHANICS (3-0). Fundamental aspects of the mechanical behavior of unsaturated soils, including stress and volumetric state variables, matrix suction measurements and soil-water characteristic curves, shear-strain-strength and volume change responses, and suction-controlled laboratory testing techniques. Prerequisites: CE 3343 and 5363, or consent of instructor.

5369. COMPUTATIONAL GEOTECHNICS (3-0). Introduction to analytical, finite differences, and finite element modeling, analyses of embankments, earth dams, slopes, excavation support systems including soldier pile and diaphragm walls, shallow and deep foundation systems, and other geostructures using different geotechnical software. Prerequisite: CE 3343 or consent of instructor.

5370. EXPERIMENTAL SOIL MECHANICS (3-0). Fundamentals of experimental studies of soil behavior, soil properties and their laboratory test methods which include consolidation, direct shear, static triaxial, cyclic triaxial, resonant column, bender elements and other advanced geotechnical laboratory tests, instrumentation and measurement techniques. Prerequisite: CE 3343 or consent of instructor.

5371. SOIL BEHAVIOR (3-0). Fundamental aspects of soil behavior, bonding, crystal structure, surface characteristics, clay mineralogy, soil-water movement, fabric, effective stress concepts, conduction phenomena, consolidation, and shear strength. Prerequisite: CE 3343 or consent of instructor.

5372. GEOSYNTHETICS (3-0). Geosynthetics properties and testing, design of geotextiles, geogrids, geonets, and geomembranes for applications in separation, pavement, embankment and retaining wall reinforcement, soil stabilization, filtration, drainage and liquid barrier, construction guidelines and case histories. Credit not granted for both CE 5372 and 4322. Prerequisite: CE 3343 or consent of instructor.

5373. ENVIRONMENTAL GEOTECHNOLOGY (3-0). Physical and chemical principles of clays, clay mineralogy, coupled flow, hydraulic conductivity, in situ and laboratory tests, chemical transport, adsorption of chemicals, risk assessment and soil remediation technologies, bioremediation, phytoremediation, electrokinetics and soil washing, waste containment. Prerequisite: CE 5371 or consent of instructor.

5374. GROUND IMPROVEMENT (3-0). Introduction and types of ground improvement for different problem soils including soft and expansive soils, shallow and deep soil densification, sand drains and wick drains, chemical modification, chemical binders and mechanisms of ground improvement, different types of grouting, deep mixing, stone columns, soil nailing, ground anchors, geosynthetics, MSE walls, reinforced slopes. Prerequisite: CE 3343, or consent of instructor.

5375. GEOTECHNICAL ASPECTS OF LANDFILLS (3-0). Introduction and types of landfills, landfill site selection, siting and configuration, compacted and geosynthetic clay liners, final cover design, landfill settlement and slope stability, post closure uses of landfills, leachate and gas generation, collection and removal system, bioreactor landfills and future trends. Prerequisite: CE 3343 or consent of instructor.

5376. GIS IN GEOTECHNICS (3-0). Introduction to GIS, Geographical Information Systems, (ArcInfo/ArcView) based applications in geotechnical engineering, including bore-log database management and profiling, spatial analyses and assessment of liquefaction, ground motion amplification, landslide, and groundwater contamination hazard potentials. Prerequisite: CE 3343 or consent of instructor.

5377. CONSTRUCTION PROJECT MANAGEMENT AND JOB COSTING (3-0). Financial aspects and job costing of a construction project. Includes project management principles, budgets, cost codes, cost-to-complete, and financial reports specific to the management of a construction company and project control. Prerequisite: consent of instructor.

5378. CONSTRUCTION CONTRACTS, SPECIFICATIONS AND ADMINISTRATION (3-0). Types of construction contracts, contractual relationship between general contractor and owner, contractual relationship between general contractor and subcontractors, legal issues in construction administration, insurance, and concepts in value engineering. Reading and evaluating specifications, CSI Master Format. Credit not granted for both CE 4334 and CE 5378. Prerequisite: consent of instructor.

5379. CONSTRUCTION COST ESTIMATING (3-0). Types of estimates, development of unit costs, quantities take-off, cost estimating using manual methods and computerized cost estimating, budgets, and costs. Prerequisite: concurrent enrollment in CE 5386.

5382. NONDESTRUCTIVE EVALUATION OF MATERIALS AND STRUCTURES (3-0). Covers nondestructive methods and their application to engineered structures and components. Methods covered include: ultrasonic testing, acoustic emission, vibration, impact-echo, visual inspection, and frequency response. Prerequisite: CE 2313.

5383. EXPERIMENTAL STRESS ANALYSIS (3-0). Introduction to experimental stress-analysis techniques. Theory and application of mechanical strain gages, electrical strain gages, introduction to photoelastic and thermal techniques, and brittle coatings. Prerequisite: CE 2313.

5384. BRIDGE DESIGN (3-0). Analysis and design-synthesis of bridges and guideways for vehicles using latest recommended practice documents. Covers concrete, steel, and timber structures including construction practices and procedures. Prerequisites: CE 4347 and 4348.

5385. STRUCTURAL DYNAMICS (3-0). Equation of motion for single degree of freedom systems including: free vibration; harmonic and periodic excitations; arbitrary, step and pulse excitations. Dynamic response of multi degree of freedom systems including: free vibration; computation of vibration properties of structures; damping in structures; modal analysis; and response history analysis. Dynamic analysis of systems with distributed mass. Prerequisite: CE 5303 or consent of instructor.

5386. CONSTRUCTION PLANNING AND SCHEDULING (3-0). Construction productivity, planning, and scheduling of operations, flow charts, linear programming, critical path method (CPM), program evaluation review techniques (PERT), precedence networks. Computer methods. Prerequisite: concurrent with CE 5379.

5387. CONSTRUCTION PRODUCTIVITY (3-0). Evaluation of construction project management's effectiveness. An investigation of the advanced techniques required for improvement of construction projects including time, cost, quality management, preplanning, field evaluation techniques, time-lapse photograph, safety, human factors, and communications. Prerequisite: CE 5379, CE 5386 and IE 5318.

5388. PIPELINE CONSTRUCTION AND TRENCHLESS TECHNOLOGY (3-0). Pipeline and utility design, construction and renewal. Topics include pipeline infrastructure structural considerations, planning and construction considerations, pipe materials, and trenchless technologies. Prerequisite: Graduate standing and consent of instructor.

5389. PIPELINE INFRASTRUCTURE ASSET MANAGEMENT AND SUSTAINABILITY (3-0). Pipeline infrastructure inventory, inspection, and life cycle costs. Topics include pipeline deterioration parameters, asset management technologies, risk assessment, government regulations and case studies. Prerequisite: graduate standing and consent of instructor.

5391. ADVANCED STUDIES IN CIVIL ENGINEERING (3-0). Individual studies of advanced topics under the supervision of a professor or professors. Graded F, P, R. Prerequisite: consent of instructor.

5395. MASTER'S PROJECT (3-0). Non-thesis master's degree candidates with approval to include a project in their program. Graded F, P, R. Prerequisite: consent of instructor and approval of Civil Engineering Graduate Advisor.

5398. THESIS (3-0). Research and preparation pertaining to the master's thesis. Graded F, R.

5695. MASTER'S PROJECT (6-0). Non-thesis master's degree candidates with approval to include a project in their program. Graded F, P, R. Prerequisite: consent of instructor and approval of Civil Engineering Graduate Advisor.

5698. THESIS (6-0). Research and preparation pertaining to the master's thesis. Graded F, P, R.

6197. RESEARCH IN CIVIL ENGINEERING (1-0). Individual supervised research projects. May be repeated for credit. Graded F, P, R. Prerequisite: consent of instructor and approval of Supervising Committee Chair.

6297. RESEARCH IN CIVIL ENGINEERING (2-0). Individual supervised research projects. May be repeated for credit. Graded F, P, R. Prerequisite: consent of instructor and approval of Supervising Committee Chair.

6300. ADVANCED TOPICS IN CIVIL ENGINEERING (3-0). Topics of current interest in the field of civil engineering. The subject title is listed in the class schedule and in the student's record. Topics vary. May be repeated for credit when topic changes. Prerequisite: consent of instructor.

6306. PUBLIC TRANSIT PLANNING AND OPERATIONS (3-0). Theory and application of technologies used for transit demand analysis, routing, scheduling, evaluation, crew assignment, maintenance strategies, and management. Land-use impact on public transit policy and operation is also introduced. Prerequisite: CE 4311.

6308. ANALYTICAL MODELS IN TRANSPORTATION (3-0). Development and analysis of mathematical models in transportation. Topics include travel demand, trip generation, distribution, mode choice, assignment, plan evaluation, spatial distribution, traffic control and flow models; principles of behavioral, econometric, deterministic, probabilistic, and chaotic simulation models, and their applications. Prerequisite: CE 4311.

6309. TRAFFIC FLOW THEORY (3-0). Speed, density relationships of vehicular traffic flow; statistical aspects of traffic events and queuing processes; deterministic models and simulation models of traffic flow behavior; applications of flow theory to traffic problem solutions. Prerequisite: CE 5330 or equivalent.

6311. ADVANCED FOUNDATION DESIGN (3-0). Subsurface investigations; advanced design of mat foundations, retaining walls, reinforced retaining walls, anchor tie-backs, driven piles, and piers; destructive and nondestructive tests on deep foundations; group piles, laterally loaded piles, and design of foundations in expansive soils. Prerequisite: CE 4321 or 5364.

6312. IN-SITU TESTING (3-0). Site characterization, in-situ testing procedures and soil property interpretation methods for standard penetration tests, cone penetration tests utilizing friction cone, piezocone, and seismic cone, dilatometer, vane shear, pressure meter, and bore hole shear tests, non-destructive tests for pavement subgrade characterization. Prerequisite: CE 3143 or CE 5370, or consent of instructor.

6313. DESIGN OF EARTH DAMS (3-0). Introduction to dams and levees, failure and damage analysis, erosion, seepage, filter, drainage design, foundation preparation for problematic subsoil conditions, seepage induced slope stability issues, desiccation crack and erosion control, numerical modeling and case studies, seismic issues. Prerequisite: CE 5367 or consent of instructor.

6314. STORMWATER MODELING (3-0). Hydrologic modeling methods and issues, urban watershed modeling, methods of system analysis; analysis of hydrologic components as linear and nonlinear systems, watershed response, kinematic wave; and model parameters optimization. Prerequisite: CE 5346 and 5347.

6315. ADVANCED HYDRAULICS (3-0). Flow resistance, St. Venant equations, solution of St. Venant by finite difference methods, dam break problem, water hammer intro to finite elements to open channel flow. Prerequisites: CE 5346 and 5347.

6316. SEDIMENT TRANSPORT (3-0). Sourcing the sediment influx, the settling velocity, Shields critical shear stress, design with critical shear, bedload transport equations, suspended load transport, total transport equation, regime theory as index of stability. Prerequisites: CE 5346 or 4358, and CE 5347.

6324. INDUSTRIAL AND HAZARDOUS WASTES (3-0). Industrial classification and profile, waste characterization, industrial waste survey and sewer plan, sampling and data analysis, hazardous and priority chemicals and their impact, waste minimization, pretreatment regulations, specialized physical, chemical, and biological waste treatment processes, specific industries and applicable waste treatment process train, combined industrial and municipal waste treatment. Prerequisite: CE 5319, CE 5325 or consent of instructor.

6329. ADVANCED ENVIRONMENTAL ENGINEERING CONTROL PROCESSES (2-3). Standard laboratory techniques for unit operations and processes in environmental engineering. Advanced en-

vironmental engineering theories and practices, research topics, and methods. Prerequisite: CE 5319, CE 5325 or consent of instructor.

6350. ADVANCED CONCRETE DESIGN II (3-0). Detailing of connections for ductility demands, modified compression field theory, strut and tie modeling of systems and areas, design of shear walls and hybrid construction; concrete folded plates and shells. Prerequisite: CE 5312.

6352. ADVANCED FINITE ELEMENT METHOD (3-0). Weak and mixed formulations; Eulerian and Lagrangian mesh formulations; plane stress and plane strain, axisymmetric element equations; two dimensional elasticity equations; 2-D and 3-D isoparametric formulations; error analysis and convergence criteria for linear/nonlinear problems; nonlinear-geometric, materials, and contact formulation; cyclic plasticity formulation. Prerequisite: CE 5303.

6354. REPAIR AND REHABILITATION OF STRUCTURES (3-0). Causes of distress, evaluation methods for condition, strength, serviceability; repair materials, repair techniques, and quality control methods for repair of concrete. Criteria for rehabilitation; retrofit techniques for change in function, loading, and seismic forces. Prerequisites: CE 5311 and 5312.

6355. EARTHQUAKE ENGINEERING (3-0). Earthquake characteristics; design of structures to resist earthquakes. Characterization of earthquakes for design. Development of design criteria for elastic and inelastic structural response. Seismic performance of various structural systems. Prediction of nonlinear seismic behavior. Basis for code design procedures. Preliminary design of steel and reinforced concrete structures. Evaluation of earthquake vulnerability of existing structures and rehabilitation of seismic deficiencies. Prerequisites: CE 5385.

6356. ENERGY METHODS (3-0). Principles of mechanics; elastic beams and frames; variational method: curved cantilever beams; Rayleigh Ritz method; special form of Euler equation; differential equation for beam; variation of double integral; first variation of triple integral. Deformable bodies using indicial notation; buckling using energy method; Lagrange and Hamilton Principles; theory and analysis of plates; theory and buckling; and theory of vibration. Prerequisite: consent of instructor.

6357. STRUCTURAL STABILITY (3-0). Buckling of columns; approximate method of analysis for buckling problems; beam columns; structural system stability (buckling of frames); lateral torsional buckling; buckling of plates; and buckling of axially compressed cylindrical shells. Prerequisites: CE 3341; CE 5303 or concurrent enrollment.

6358. NUMERIC METHODS IN MECHANICS (3-0). Introduction to matrices; vector spaces; tensors, Eigenvalue problems. Solution to discrete systems: steady state problems and propagation problems. Solution of continuous systems: differential formulation; variational method; and weighted residual methods. Solution of linear and nonlinear static equilibrium equations. Prerequisite: CE 3341.

6359. PLATES AND SHELLS (3-0). Introduction to differential geometry; equilibrium of plate and shell elements; equilibrium equations for shell revolutions; compound shells; nonsymmetrical loaded shell; anti-symmetrical loaded shell; membrane theory; constitutive law; analysis of plates and shells using energy method; and bending and stability of plates and shells. Prerequisite: CE 5315.

6360. THEORY OF ELASTICITY (3-0). Introductory mathematical concepts: vector calculus; tensor algebra. Theory of deformation; strain displacement relations in orthogonal curvilinear coordinate systems. Theory of stress; differential equation of equilibrium in curvilinear spatial coordinates; three dimensional equations of elasticity; nonlinear constitutive relationship; plane theory of elasticity; and plane elasticity in polar coordinates. Prerequisite: CE 5315.

6391. ADVANCED PROJECTS IN CIVIL ENGINEERING (3-0). Projects using and developing emerging technology. Graded F, P, R. Prerequisite: consent of instructor and approval of Civil Engineering Graduate Advisor.

6397. RESEARCH IN CIVIL ENGINEERING (3-0). Individual supervised research projects. May be repeated for credit. Graded F, P, R. Prerequisite: consent of instructor and approval of Supervising Committee Chair.

6399. DISSERTATION (3-0). Preparation of a doctoral dissertation in civil engineering. Graded F, R. Prerequisite: admission to candidacy for the Doctor of Philosophy degree.

6697. RESEARCH IN CIVIL ENGINEERING (6-0). Individual supervised research projects. May be repeated for credit. Graded F, P, R. Prerequisite: consent of instructor and approval of Supervising Committee Chair.

6699. DISSERTATION (6-0). Preparation of a doctoral dissertation in civil engineering. Graded F, R. Prerequisite: admission to candidacy for the Doctor of Philosophy degree.

6997. RESEARCH IN CIVIL ENGINEERING (9-0). Individual supervised research projects. May be repeated for credit. Graded F, P, R. Prerequisite: consent of instructor and approval of Supervising Committee Chair.

6999. DISSERTATION (9-0). Preparation of a doctoral dissertation in civil engineering. Graded F, P, R. Prerequisite: admission to candidacy for the Doctor of Philosophy degree.

Department of Computer Science and Engineering

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M.S., Ph.D.

Software Engineering

M.SW.Engr.

Master's Degree Plans

Thesis (M.S.) and Non-thesis (M.S., M.SW.Engr.)

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Graduate Faculty

Professors

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Assistant Professors

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Objective

The purpose of the graduate programs in Computer Science and Computer Science and Engineering is to facilitate the student's continued professional and scholarly development. The Master of Science (M.S.) programs are designed to extend the student's knowledge and emphasize a particular area of concentration. The Master of Software Engineering (M.SW.Engr.) program is designed to provide the student with the opportunity for professional development in the software engineering field. Students who have completed a bachelor's degree in CS, CSE wishing to pursue a doctoral degree may apply for admission in the B.S. to Ph.D. track. The admission requirements to this highly competitive track are the same as those for "advanced admission" (see Special Admissions Programs). The Doctor of Philosophy (Ph.D.) programs are designed to prepare the student to conduct research and development in an area of concentration.

Typical areas of concentration include

- **Computer Systems:** parallel processing, quality-of-service and resource management in distributed systems, scheduling and load balancing for parallel and distributed systems, tools for parallel programming, performance evaluation, fault-tolerant computing, interconnection networks, multimedia systems, real-time systems, memory system design;
- **Intelligent Systems:** neural networks, machine learning, planning, scientific visualization, pattern recognition, natural language processing, multi-agent environments, decision support;
- **Software Engineering:** requirements engineering, incremental delivery, conceptual modeling, scenario-based techniques, formal specifications, object-oriented software engineering, design methodologies, software testing, software maintenance, software re-engineering, software processes, real-time systems;
- **Database:** temporal databases, object-oriented databases, database models and languages, distributed database systems, indexing and hashing techniques, conceptual modeling, data security, logic and databases, query optimization, relational design theory, user interfaces, data repositories.
- **Communications:** networks, wireless communication, distributed computing, mobile computing, multimedia systems.

Admission

The CSE graduate admission committee bases its decision for graduate admission on the following criteria (in no specific order):

1. An overall GPA of 3.0 or higher in undergraduate coursework.
2. A GPA of 3.2 or higher on CS/CSE related coursework in the last two years of undergraduate degree.
3. Relevance of the student's degree (background) to the CSE curriculum.
4. Rigor of the student's bachelor's degree. A four-year degree is considered more rigorous than a three-year degree.
5. Reputation of the university/college that the student has received his/her previous degrees from.
6. GRE General Test: Admitted students typically earn the following scores on the GRE
   a. GRE quantitative score of at least 700
   b. GRE verbal score of at least 400
   c. A sum of verbal and quantitative GRE scores (i.e. scores from parts 6a and 6b combined) of at least 1150 for MS and 1250 for Ph.D. applicants. An applicant can have a

minimum score of 700 on the quantitative GRE or a minimum score of 400 on the verbal GRE, but not both. A passing score on the Fundamentals of Engineering (FE) exam is also given consideration.

Applicants for the MS degree with (or completing in the near future) a BSCSE from UT Arlington and a GPA of at least 3.2 should contact the graduate advisor regarding a GRE waiver. Those with a GPA of at least 3.5 should contact the graduate advisor regarding nomination for Advanced Admission (i.e. admission without application and fee). The GRE waiver may be extended to include non-UT Arlington candidates that have undergraduate degrees in CS or CSE (with GPA of 3.2 or above) from reputable universities with an ABET accredited program or other select universities subject to graduate advisor's approval.

7. For Ph.D. students, the following are optional. Meeting these criteria will improve both a student's chances of securing admission and receiving financial support.
   a. Publication in scholarly conferences/journals.
   b. A percentile of 80 score or higher on the Computer Science subject GRE.

The above criteria are used as follows in relevance to the three possible admission decisions, i.e., Unconditional Status; Probationary Status; and Denied.

- **Unconditional Status:** Applies to an applicant who meets the first six criteria above to a degree satisfactory to the graduate admissions committee.
- **Probationary Status:** Applies to an applicant who meets at least five of the six criteria to a degree satisfactory to the graduate admissions committee and whose record shows promise for success in the program or to an applicant who does not fulfill all the deficiency course requirements.
- **Denied:** Applies to an applicant who does not meet five of the first six criteria to a degree satisfactory to the graduate admissions committee.

Requirements for B.S. to Ph.D. accelerated program

1. An undergraduate degree in CS or CSE or Equivalent.
2. An overall GPA of 3.0 or higher in undergraduate coursework.
3. A 3.2 grade point average (on a 4.0 scale) on the last two years of undergraduate course-work. In particular, performance on CS/CSE related courses are emphasized.
4. Rigor of the student's Bachelors degree. A three-year degree is not considered rigorous enough.
5. Reputation of the University/College that the student has received his/her previous degrees from.
6. A sum of verbal and quantitative scores of 1150 or more on the GRE*:
   a. GRE quantitative score - 700
   b. GRE verbal score - 400
   c. The department does not require the advanced computer science test. A passing score on the Engineering-in-Training (EIT) exam is also given consideration for admission decisions.
7. (International Applicants)
   A Test of English as a Foreign Language (TOEFL) score - 230

Waiver of the Graduate Record Examination

Upon recommendation of the Graduate Advisor, outstanding UT Arlington graduates may qualify for waiver of the requirements for the Graduate Record Examination (GRE). To qualify, the applicant must meet the following minimum requirements:

- The student must have graduated from a commensurate bachelor's degree program at UT Arlington no more than three academic years prior to admission to the graduate program (as measured from the start of the semester for which admission is sought). A commensurate bachelor's degree program is one that is a normal feeder program for the master's degree program to which the student seeks admission. Undergraduate students in their final year of study are also eligible; in such cases, admission with the GRE waiver is contingent upon successful completion of the bachelor's degree.
- The student's UT Arlington grade-point average must equal or exceed 3.0 in the following calculations:
  - as calculated for admission to the Graduate School;
  - overall;
  - in the major field; and
  - in all upper-division work.

Applicants qualifying for waiver of GRE who do not qualify for advanced admission, must comply with all other requirements for admission, i.e., submitting the application for admission, paying fees, providing official transcripts from other institutions, and meeting any requirements established by the admitting graduate program. The GRE waiver must be recommended by the Graduate Advisor at the time of admission. The waiver of GRE program applies to applicants for master's degree programs only. Some programs may require higher grade-point averages to qualify and some will not waive the GRE under any circumstances.

Additionally, some programs may waive the GRE requirement for non-UT Arlington graduates who seek admission as a master's student and meet qualifications listed in those programs' specific admission requirements. Such waivers are not offered by all graduate programs.

Fellowships

The basis for granting a Fellowship to a student will be as follows:

- The student is admitted without provisional requirements.
- Relative standing with respect to other qualified applicants.

Continuation

To fulfill its responsibility to graduate highly qualified professionals, the Department has established certain requirements that must be met by students continuing in the graduate programs. In addition to the requirements of the Graduate School listed elsewhere in the catalog, the Computer Science and Engineering Department has established additional requirements detailed in its Guide to Graduate Programs.

Degree Requirements

Master of Science in Computer Science - Thesis

The Master of Science in Computer Science degree program is designed to develop the scholarship and research skills of the student. Thirty-one credit hours, which include one orientation seminar credit and six thesis credits, are required.

Master of Science in Computer Science and Engineering - Thesis

The Master of Science in Computer Science and Engineering, which is intended for students with a baccalaureate degree in engi-

neering, requires 31 credit hours of which one is orientation seminar and six are thesis credits, and is designed to develop the scholarship and research skills of the student.

Master of Science in Computer Science - Non Thesis

The Master of Science in Computer Science non-thesis options provide professional development in computer science. The structured option requires 37 credit hours of which one is orientation seminar.

Master of Science in Computer Science and Engineering

The Master of Science in Computer Science and Engineering non-thesis options are intended for students with an engineering baccalaureate degree. The structured option requires 37 credit hours of which one is orientation seminar.

B.S. to Ph.D. Track

The B.S. to Ph.D. track in Computer Science/Computer Science Engineering requires 30 credit hours with 21 hours of diagnostic requirements and nine hours of advanced research-oriented coursework. This is in addition to the Ph.D. requirements.

Ph.D. (Computer Science)

The Ph.D. in Computer Science continues the development of the student's research capability. Coursework selection in each student's program is designed to support the dissertation area selected by the student.

A minimum of two semesters of full-time study is required during the dissertation phase. There is no foreign language requirement.

Ph.D. (Computer Science and Engineering)

The Ph.D. in Computer Science and Engineering is available to students with a prior degree in engineering. It contains essentially the same requirements as the Ph.D. (Computer Science) degree except that it permits interdisciplinary research between Computer Science and one or more of the various engineering disciplines.

Computer Science and Engineering (CSE)

5191. INDIVIDUAL STUDY IN COMPUTER SCIENCE (1-0). Topics dealing with special problems in Computer Science on an individual instruction basis. May be repeated for credit.

5194. ORIENTATION SEMINAR (1-0). Presentation of computer science research by CSE faculty, students, and invited speakers. Preparation of program of work.

5301. DATA ANALYSIS AND MODELING TECHNIQUES (3-0). Concepts and techniques for performing experiments and analyzing their results. Topics cover fundamental statistics, probability and data-representation concepts, interference through hypothesis testing, information theory, queuing models, and selected topics such as capacity planning and bottleneck analysis, clustering and classification, and hidden Markov models with computer science applications as examples.

5306. OPERATING SYSTEMS II (3-0). Issues and challenges in distributed systems, including: communication, distributed processes, naming and name services, synchronization, consistency and replication, transactions, fault tolerance and recovery, security, distributed objects, and distributed file systems. Prerequisite: CSE 3320 or consent of instructor.

5307. PROGRAMMING LANGUAGE CONCEPTS (3-0). Study and evaluation of concepts in programming language for modern computer systems. Programming projects are selected from string-based, symbolic, algorithmic, and object-oriented languages.

5311. DESIGN AND ANALYSIS OF ALGORITHMS (3-0). Techniques for analyzing upper bounds for algorithms and lower bounds for problems. Problem areas include: sorting, data structures, graphs, dynamic programming, combinatorial algorithms, introduction to parallel models.

5314. COMPUTATIONAL COMPLEXITY (3-0). Sequential and parallel complexity classes (e.g., NP-complete and P-complete) and representative problems in languages, logic and graphs. Reduction techniques. Approximate solutions. Complexity hierarchies.

5315. NUMERICAL METHODS (3-0). Selected topics from the theory and practice of using automatic digital computers for approximating arithmetic operations, approximating functions, solving systems of linear and non-linear equations, and solving ordinary and partial differential equations.

5316. MODELING, ANALYSIS, AND SIMULATION OF COMPUTER SYSTEMS (3-0). Mathematical formalism and techniques used for computer system modeling and analysis. Reviews probability, transform theory, coding theory, and Petri nets. Topics may include knowledge based modeling, validation procedures, various simulation techniques for stochastic process and real-time distributed systems.

5317. DESIGN AND CONSTRUCTION OF COMPILERS (3-0). Review of programming language structures, translation, and storage allocation. Introduction to context-free grammars and their description. Design and construction of compilers including lexical analysis, parsing and code generation techniques. Error analysis and simple code optimizations will be introduced.

5318. APPLIED GRAPH THEORY AND COMBINATORICS (3-0). Connected and disconnected graphs; trees; graph planarity; Hamiltonian circuits and Euler tours; coloring; flow and graph optimization algorithms, fundamentals of combinatorics; generating functions and recurrence relations; inclusion-exclusion principle; applications in telecommunications; mobile computing, parallel processing and multiprocessor architectures.

5319. SPECIAL TOPICS IN THEORY AND ALGORITHMS (3-0). May be repeated for credit when topics vary.

5320. SPECIAL TOPICS IN SOFTWARE ENGINEERING (3-0). May be repeated for credit when topics vary.

5321. SOFTWARE TESTING (3-0). Study of software quality assurance, software testing process, methods, techniques and tools. Topics include formal review techniques, black box testing, white box testing, integration testing, acceptance testing, regression testing, performance testing, stress testings, and testing of object-oriented software.

5322. SOFTWARE DESIGN PATTERNS (3-0). Study and application of object-oriented software design patterns to software development and maintenance in the object-oriented paradigm.

5323. SOFTWARE ENGINEERING PROCESSES (3-0). Introduces software lifecycle models, process disciplines, project management concepts, and applies them by mastering the Personal Software Process (PSP).

5324. SOFTWARE ENGINEERING: ANALYSIS, DESIGN, AND TESTING (3-0). Motivations, principles, and goals of software engineering; technical aspects of software projects, including: review of structured analysis and structured design, emphasis on object-oriented methods of requirements analysis and specification, design, and implementation; software testing concepts; team project.

5325. SOFTWARE ENGINEERING: MANAGEMENT, MAINTENANCE, AND QUALITY ASSURANCE (3-0). Issues and principles for software management; managerial and support aspects of software projects, including: processes, estimation techniques, plan-

ning and scheduling, risk analysis, metrics, and quality assurance. Other topics include: configuration management, verification and validation, and maintenance; team project.

5326. REAL-TIME SOFTWARE DESIGN (3-0). Specification, design, and analysis of real-time systems including real-time logics and decidability of real-time conditions; real-time scheduling approaches, and schedulability analysis, system requirement specifications and languages; procedural and object-oriented methods; specialized analysis techniques for distributed and for control applications; team project.

5327. TELECOMMUNICATIONS SOFTWARE DEVELOPMENT (3-0). General understanding and classification of telecommunications systems and applications. Issues relating to the analysis, design, implementation, and testing of telecommunications software. Prerequisite: CSE 5324 and 5344.

5328. SOFTWARE ENGINEERING TEAM PROJECT I (1-2). Apply the knowledge and skills gained in other software engineering courses to synthesize a solution to a significant and realistic problem. Participate in team project activities, including: proposal writing, problem analysis, software requirements specification, software project planning, and preliminary software design. Prerequisite: CSE 5325 (or concurrent enrollment). Open to Master of Software Engineering candidates only.

5329. SOFTWARE ENGINEERING TEAM PROJECT II (1-2). Continuation of CSE 5328. Team project activities include: detailed software design, implementation, software quality assurance, software testing, integration, and demonstration. Prerequisite: CSE 5328. Open to Master of Software Engineering candidates only.

5330. DATABASE SYSTEMS (3-0). Database system architecture; management and analysis of files, indexing, hashing, and B+-trees; the relational model and algebra; the SQL database language; database programming techniques, database design using Entry-Relationship, extended E-R, and UML modeling; basics of normalization. Introduction to database security, query processing and transaction management. Prerequisite: CSE 2320.

5331. DBMS MODELS AND IMPLEMENTATION TECHNIQUES (3-0). DBMS system implementation techniques, including query optimization, transaction processing, concurrency control, buffer management and recovery. Object-oriented, object-relational and XML databases. Introduction to advanced database models, such as active, distributed, temporal, spatial and data warehousing. Prerequisite: CSE 3330/CSE 5330, or consent of instructor.

5333. DISTRIBUTED AND PARALLEL DATABASES (3-0). Distributed database system architecture and design, distributed transaction management and database interoperability; distributed query processing; parallel database architectures and techniques; and parallel algorithms for database operations. Prerequisite: CSE 5330 or consent of instructor.

5334. DATA MINING (3-0). Preparing data for mining, using preprocessing, data warehouses and OLAP; data mining primitives, languages and system architecture; data mining techniques including association rule mining, classification/prediction and cluster analysis. Prerequisite: CSE 5330 or consent of instructor.

5335. WEB DATA MANAGEMENT AND XML (3-0). XML has become an important standardization for data representation and information exchange among Internet co-operative applications. This course provides an in depth study of the area of web data management with an emphasis on XML standards and technologies. The course primarily covers the state of the art in designing and building web applications and services, primarily focusing on issues and challenges that revolve around the management and processing of XML data. Topics include: Web programming, XML standards, XML query languages, native XML storage management, XML on relational databases, XML indexing, Web Services, metadata management with RDF, and Semantic Web. Prerequisite: CSE 3330/CSE 5330, or consent of instructor.

5336. STREAM DATA MANAGEMENT (3-0). This course provides a study of special-purpose data management systems for processing stream data generated by sensors, RFIDs (Radio Frequency Identifications), and other ubiquitous devices. Topics include: Analysis of the differences between processing and managing stored data and stream data (including events). Using sliding windows to unblock blocking operations for continuous queries. Approximation techniques for continuous aggregation queries. Quality of Service (QoS) requirements of stream and complex event processing applications and their impact on various aspects of processing. Modeling continuous queries, scheduling strategies for (multiple) continuous queries, adaptive query plans, and load shedding to trade-off QoS requirements. Design and implementation of stream processing systems. Prerequisite: CSE 3330 or CSE 5330, or consent of instructor.

5339. SPECIAL TOPICS IN DATABASE SYSTEMS (3-0). May be repeated for credit when topics vary.

5343. REAL-TIME DATA ACQUISITION AND CONTROL SYSTEMS (2-3). Advanced course in design of microcomputer-based systems. Emphasis is on the application of state-of-the-art microprocessors, microcomputers, and other LSI and VLSI components to real-time, interactive, and/or embedded systems. Prerequisite: CSE 5442 or consent of instructor.

5344. COMPUTER NETWORKS (3-0). Study of computer network architectures, protocols, and interfaces. The OSI reference model and the Internet architecture will be discussed. Networking techniques such as multiple access, packet/cell switching, and internetworking will be studied. Discussion will also include end-to-end protocols, congestion control, high-speed networking, and network management. Emphasis will be on Internet and ATM. Prerequisite: CSE 3320 or consent of instructor.

5345. FUNDAMENTALS OF WIRELESS NETWORKS (3-0). Fundamentals of wireless networks, including wireless channels, coding and modulation, cellular architectures and protocols, multiple division techniques, multiple access control, wireless LAN/PAN, mobile IP and wireless internet, TCP over wireless, ad-hoc networks, sensor networks. Prerequisite: CSE 4344/5344 or equivalent course.

5346. NETWORKS II (3-0). This course provides an in depth study and comparison of the two primary networking paradigms, Internet/broadcast and switched, using two technologies, IPv6 and ATM, as representative examples. The course is implementation-oriented, focusing on issues such as routing, broadcast, multicast, mobility, network configuration, and quality of service. Prerequisite: CSE 5344.

5347. TELECOMMUNICATION NETWORKS DESIGN (3-0). A study of advanced telecommunication systems and networks, internetworking functions, networking architectures and their convergence towards an IP/Ethernet centric architecture. Prerequisite: CSE 4344, CSE 5344, or CSE 5346.

5348. MULTIMEDIA SYSTEMS (3-0). Representations and techniques for processing, communicating, and compression of text, audio, graphics, and video in real time. Project integrating these topics. Prerequisite: CSE 3320.

5349. SPECIAL TOPICS IN NETWORKING (3-0). May be repeated for credit when topics vary.

5350. COMPUTER ARCHITECTURE II (3-0). A study of advanced uniprocessor and basic multiprocessor systems. Topics may include memory management systems, pipelined processors, array and vector processors, and introduction to architecture of multiprocessor systems. Prerequisite: CSE 3322 or consent of instructor.

5351. PARALLEL PROCESSING (3-0). Covers the theory and practice of parallel processing. Theoretical topics include: abstract models and algorithms for shared memory computation (PRAM); algorithms for various topologies such as meshes and hypercubes; efficiency and speedup analysis. Problem areas include data structures, numerical methods, graphs, combinatorics. Practical topics include synchronization, routing, scheduling, parallelizing serial computations, programming languages. Includes programming exercises using one or more concurrent programming languages, on one or more parallel computers. Prerequisite: CSE 3320 or consent of instructor.

5353. DISTRIBUTED COMPUTING (3-0). Programming languages, support components, coordination models, and fundamental algorithms for distributed and clustered systems. Prerequisite: CSE 5306.

5355. COMPUTER SYSTEM PERFORMANCE EVALUATION (3-0). Queueing network models and simulation for studying the performance of overall computer systems. Theory and applications of Markov process, Random Walk, Renewal Process, and Birth and Death Process. Topics also include bottleneck identification, capacity planning, hardware selection and upgrade, and performance tuning. Data collection, presentation and interpretation, benchmarking and the proper choice of performance metrics will be emphasized. Prerequisite: CSE 3320.

5359. SPECIAL TOPICS IN SYSTEMS & ARCHITECTURE (3-0). May be repeated for credit when topics vary.

5360. ARTIFICIAL INTELLIGENCE I (3-0). Introduction to the methods, concepts and applications of artificial intelligence, including knowledge representation, search, theorem proving, planning, natural language processing, and study of AI programming languages. Prerequisite: CSE 2320 and 3315, or consent of instructor.

5361. ARTIFICIAL INTELLIGENCE II (3-0). Continuation of artificial intelligence methods and techniques, including uncertainty reasoning, machine learning, perception, and advanced topics in knowledge representation, search and planning. Emphasis on design and implementation of AI solutions. Prerequisite: CSE 5360 or consent of instructor.

5364. ROBOTICS (2-3). An introduction to robotics and the design and programming of autonomous robot systems. Topics include basic kinematics, dynamics, and control, as well as sensors, knowledge representation, and programming techniques. Coursework includes individual and group projects involving the building and programming of simulated and real robots. Prerequisite: CSE 2320 and CSE 3442.

5365. COMPUTER GRAPHICS (3-0). Input/output devices and programming techniques suitable for the visual representation of data and images. Prerequisite: CSE 1320, analytic geometry and linear algebra, or consent of instructor.

5366. DIGITAL SIGNAL PROCESSING (3-0). Introduction to principles and applications of digital signal processing. Topics include: analysis of signals and systems, Fourier and Z transforms, digital filter design techniques (FIR and IIR), autoregressive (AR) and autoregressive moving average (ARMA) modeling. Applications to science and engineering include: financial predictions and processing of digital music. Laboratory work includes some programming and use of high quality library routines and packages such as Mathematica, Matlab. Prerequisite: CSE 1320 and consent of Graduate Advisor.

5367. PATTERN RECOGNITION (3-0). Principles and various approaches of pattern recognition processes, including Bayesian classification, parametric/non-parametric classifier design, feature extraction for signal representation, and techniques for classification and clustering. Current issues in pattern recognition research will also be examine. Prerequisite: CSE 2320 , MATH 3313.

5368. NEURAL NETWORKS (3-0). Theoretical principles of neurocomputing. Learning algorithms, information capacity, and mapping properties of feedforward and recurrent networks. Different neural network models will be implemented and their practical applications discussed. Prerequisite: CSE 1320 and calculus II, or consent of instructor.

5369. SPECIAL TOPICS IN INTELLIGENT SYSTEMS (3-0). May be repeated for credit when topics vary.

5370. BIOINFORMATICS (3-0). Basic biology of genome and common laboratory techniques Overview of discrete probability theory, random variables and processes. Issues in genome mapping, sequencing and analysis: sequence alignments and alignment algorithms; genomic databases and information access; structure and features of DNA sequences. Techniques in contemporary biotechnology, including proteomics and gene expression analysis using microarray chips. Prerequisite: CSE 5311 or consent of instructor.

5379. SPECIAL TOPICS IN BIOINFORMATICS (3-0). May be repeated for credit when topics vary.

5380. INFORMATION SECURITY 1 (3-1). Hands-on introduction to the basics of security. Includes system security, buffer overflows, a high-level overview of cryptography, firewalls and IDS/IPS, malware, penetration testing, forensics, and system administration. Prerequisite: CSE 3320 or consent of instructor.

5381. INFORMATION SECURITY 2 (3-1). Deeper study of the fundamentals of security, including symmetric key cryptography, public key cryptography, cryptographic protocols, malware design, network attacks and defenses, data security, privacy, and wireless security. Prerequisite: CSE 5380 and CSE 4344 or consent of instructor.

5388. SPECIAL TOPICS IN INFORMATION SECURITY (3-0). May be repeated for credit when topics vary.

5389. SPECIAL TOPICS IN MULTIMEDIA, GRAPHICS, AND IMAGE PROCESSING (3-0). May be repeated for credit when topics vary.

5391. INDIVIDUAL STUDY IN COMPUTER SCIENCE (3-0). Topics dealing with special problems in Computer Science on an individual instruction basis. May be repeated for credit.

5392. TOPICS IN COMPUTER SCIENCE (3-0). May be repeated for credit when the topics vary.

5393. DIRECTED STUDY IN COMPUTER SCIENCE (3-0).

5394. MASTER'S PROJECT I (3-0).

5395. MASTER'S PROJECT II (3-0).

5398. MASTER'S THESIS I (3-0). Preliminary research effort for the master's thesis, including problem definition and literature search, along with identification of resources, milestones, examining committee members, and external publication venue. Graded F, R.

5442. EMBEDDED COMPUTER SYSTEMS (3-0). Design of micro computer-based systems; microcomputer programming, component and system architectures, memory interfacing, parallel and serial I/O interfacing, A/D and D/A conversion, and typical applications. Prerequisite: CSE 3322 or consent of instructor.

5698. MASTER'S THESIS II (6-0). Completion of tasks in support of the thesis defined in Master's Thesis I, including oral defense of the written documents. Prerequisite: CSE 5398. Graded F, R, P.

6197. RESEARCH IN COMPUTER SCIENCE (1-0). Individually supervised research projects.

6297. RESEARCH IN COMPUTER SCIENCE (2-0). Individually supervised research projects.

6306. ADVANCED TOPICS IN OPERATING SYSTEMS (3-0). May be repeated for credit when topics change. Prerequisite: CSE 5306 or consent of instructor.

6311. ADVANCED COMPUTATIONAL MODELS AND ALGORITHMS (3-0). This course aims at exploring advanced computation models, theory and advanced algorithm design and analysis tech-

niques that have broad applicability in solving real-life problems in cross-disciplinary areas such as the Internet computing, Web search engines, data mining, bioinformatics, wireless mobile and sensor networks, dynamic resource management, distributed computing, and social networking. Topics include: Theory of NP-completeness; Equivalence of Machine Models; Lower Complexity Bounds; Randomized and Probabilistic Algorithms; Game-theoretic and Information-theoretic Models; Approximation and Optimization Techniques. Prerequisite: CSE 5311 or consent of instructor.

6314. ADVANCED TOPICS IN THEORETICAL COMPUTER SCIENCE (3-0). May be repeated for credit when topics change. Prerequisite: CSE 5314 or consent of instructor.

6319. SPECIAL TOPICS IN ADVANCED THEORY AND ALGORITHMS (3-0). May be repeated when topics vary.

6323. FORMAL METHODS IN SOFTWARE ENGINEERING (3-0). Methods for modeling and reasoning that play a fundamental role in computer science. Topics include: advanced mathematical logic, formal proof methods, set theory, and formal specification languages and their applications to software engineering. Prerequisite: CSE 5324 or consent of instructor.

6324. ADVANCED TOPICS IN SOFTWARE ENGINEERING (3-0). May be repeated for credit when topics change. Prerequisite: CSE 5325 (or concurrent enrollment) and consent of instructor.

6329. SPECIAL TOPICS IN ADVANCED SOFTWARE ENGINEERING (3-0). May be repeated for credit when topics vary.

6331. ADVANCED TOPICS IN DATABASE SYSTEMS (3-0). May be repeated for credit when topics change. Prerequisite: CSE 5332 and consent of instructor.

6332. TECHNIQUES FOR MULTIMEDIA DATABASES (3-0). Overview of data types, formats and compression techniques for audio, video and image data; operating systems techniques for multimedia; video delivery techniques; indexing and retrieval techniques; content-based video modeling; multimedia data on the Web. Prerequisite: CSE 5331 or consent of instructor.

6339. SPECIAL TOPICS IN ADVANCED DATABASE SYSTEMS (3-0). May be repeated for credit when topics vary.

6344. ADVANCED TOPICS IN COMMUNICATION NETWORKS (3-0). May be repeated for credit when topics change. Prerequisite: CSE 5346 or consent of instructor.

6345. PERVASIVE COMPUTING AND COMMUNICATIONS (3-0). Issues and challenges in pervasive computing environments: interoperability and heterogeneity; location-awareness and mobility; transparency and proactivity; trust, authentication and security, information acquisition and dissemination in mobile and pervasive systems. Contest-aware computing. Ad-hoc, sensor and mobile P2P systems in pervasive computing. Case studies. Prerequisite: Introductory courses in Networks, Algorithms and Operating Systems: e.g., CSE 5344, CSE 5311, and CSE 5306, or consent of instructor.

6347. ADVANCED WIRELESS NETWORKS AND MOBILE COMPUTING (3-0). Wireless architectures and protocols (e.g., GSM, CDMA); channel assignment and resource allocation; mobility and location management; mobile data management; wireless data networking and multimedia; call admission control and QoS provisioning; cross layer optimization, performance modeling. Prerequisite: CSE 5345 and CSE 5330.

6348. ADVANCES IN SENSOR NETWORKS (3-0). Covers application and architecture of wireless sensor networks. Topics include platforms, routing, coverage, MAC, transport layer, data storage, query, and in-network processing. Prerequisite: CSE 5345 or equivalent course.

6349. SPECIAL TOPICS IN ADVANCED NETWORKING (3-0). May be repeated for credit when topics vary.

6350. ADVANCED TOPICS IN COMPUTER ARCHITECTURE (3-0). May be repeated for credit when topics change. Prerequisite: CSE 5350 and consent of instructor.

6351. TOPICS IN PARALLEL AND DISTRIBUTED COMPUTING (3-0). May be repeated for credit when topics change. Prerequisite: CSE 5350, 5351, or consent of instructor.

6352. FAULT-TOLERANT COMPUTING (3-0). Topics in reliable and fault-tolerant computing. May be repeated for credit when topics change. Prerequisite: CSE 5350 and consent of instructor.

6359. SPECIAL TOPICS IN ADVANCED SYSTEMS AND ARCHITECTURE (3-0). May be repeated for credit when topics vary.

6362. ADVANCED TOPICS IN ARTIFICIAL INTELLIGENCE (3-0). May be repeated for credit when the topic changes. Prerequisite: CSE 5361 and consent of instructor.

6363. MACHINE LEARNING (3-0). A detailed investigation of current machine learning methods, including statistical, connectionist, and symbolic learning. Presents theoretical results for comparing methods and determining what is learnable. Current issues in machine learning research will also be examined. Prerequisite: CSE 5361 and consent of instructor.

6366. DIGITAL IMAGE PROCESSING (3-0). Digitization and coding of images, characterization and representation of digital images in spatial and frequency domains, picture restoration and enhancement, filtering of two-dimensional signals, image reconstruction. Prerequisite: CSE 5366 or consent of instructor.

6367. COMPUTER VISION (3-0). Advanced techniques for interpretation, analysis, and classification of digital images. Topics include methods for segmentation, feature extraction, recognition, stereo vision, 3-D modeling, and analysis of time-varying imagery. Also taught as EE 6358. Prerequisite: CSE 6366 or EE 5356 or EE 5357, and consent of instructor.

6369. SPECIAL TOPICS ADVANCED INTELLIGENT SYSTEMS (3-0). May be repeated for credit when topics vary.

6379. SPECIAL TOPICS IN ADVANCED BIOINFORMATICS (3-0). May be repeated for credit when topics vary.

6388. SPECIAL TOPICS IN ADVANCED INFORMATION SECURITY (3-0). May be repeated for credit when topics vary.

6389. SPECIAL TOPICS IN ADVANCED MULTIMEDIA, GRAPHICS, AND IMAGE PROCESSING (3-0). May be repeated for credit when topics vary.

6392. SPECIAL TOPICS IN ADVANCED COMPUTER SCIENCE (3-0). May be repeated for credit when the topics vary.

6397. RESEARCH IN COMPUTER SCIENCE (3-0). Individually supervised research projects.

6399. DISSERTATION (3-0). Preparation of dissertation in computer science or computer science and engineering. Graded F, R.

6697. RESEARCH IN COMPUTER SCIENCE (6-0). Individually supervised research projects.

6699. DISSERTATION (6-0). Preparation of dissertation in computer science or computer science and engineering. Graded F, R.

6997. RESEARCH IN COMPUTER SCIENCE (9-0). Individually supervised research projects.

6999. DISSERTATION (9-0). Preparation of dissertation in computer science or computer science and engineering. Graded P, F, R.

Objective

The course offerings provide the student with an opportunity to broaden as well as to intensify his or her knowledge in a number of areas of electrical engineering. The student, with the aid of a faculty adviser, may plan a program in any one of a number of fields of specialization within electrical engineering or from the offerings of related departments in science and engineering.

Graduate study and research are offered in the areas of:

- Digital and Microprocessor/Controller Systems: Digital signal processors, Embedded microcontrollers, Microprocessors, Advanced microprocessor systems.
- Solid-State Devices, Circuits and Systems: Semiconductor Theory, Microwave Devices and Circuits, Analog Electronics.
- Systems, Controls and Automated Manufacturing: Systems, Controls, Manufacturing, Discrete Event Control, Neural and Fuzzy Control, Nonlinear Modern Control, Biomedical Signal Processing and Instrumentation
- Electromagnetic Fields and Applications: Remote Sensing, Electromagnetic Fields, Propagation, Scattering, Radiation, and Microwave Systems.
- Digital Signal and Image Processing: Vision Systems, Neural Networks, Statistical Signal Processing, Nonlinear Image Processing, Virtual Prototyping, and Virtual Environments.
- Telecommunications and Information Systems: Information Transmission and Communication Systems
- Power Systems and Industrial Power Electronics: Efficient Operation, Generation, Transmission, Distribution, Deregulation; Power Electronics Engineering.
- Optical Devices and Systems: Optics Electro-optics, Diffractive Optics, Nonlinear Optics, and Lasers.
- Nanotechnology and MEMS—Materials and Devices: Quantum Electronic Devices, Semiconductor Surfaces and Interfaces, Single Electron Devices, Sensors and Detectors, Carbon Nanotube Devices, Noise and Reliability in Nano-Electronic Devices, Microactuators, RF MEMS, Polymer Electronics, and Nanophotonics

The program is designed to satisfy the needs of students pursuing master's and doctoral degrees and to provide for the student seeking to increase knowledge in areas of electrical engineering related to engineering practice. The courses offered will provide practicing engineers with advanced, up-to-date education in electrical engineering.

Admission Criteria

The admission process considers all of the application material including official transcripts, GRE scores, letters of recommendation and the statement of purpose. No single objective factor is used to finalize the decision for admission or to deny admission. An attempt will be made to match the technical aspirations of the potential graduate students with the departmental resources in order to provide a stimulating academic environment for the students and their graduate education.

Criteria concerning (1) unconditional, (2) provisional, (3) deferred, (4) denied and (5) fellowship, are given below:

1. *Admission with Unconditional Status:* A typical applicant who is "admitted" will have met the following admission requirements.
   - The minimum undergraduate GPA requirement
     a. For MSEE admission 3.25 (on a 4.0 scale) based on upper division coursework (junior and senior level or equivalent)
     b. For Ph.D. admission 3.5 based on MSEE or equivalent

Department of Electrical Engineering

www.uta.edu/ee

Area of Study and Degrees

Electrical Engineering
M.S., M.Engr., Ph.D.

Master's Degree Plans

Thesis, Thesis Substitute and Non-Thesis

Chair

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Graduate Faculty

Professors

Alavi, Bredow, Butler, Carter, Celik-Butler, Devarajan, Kirk, Kondraske, Lee, Lewis, Manry, Prabhu, Rao, Shoults, Stephanou, Yeung

Associate Professors

Chiao, Davis, Dillon, Engels, Oraintara, Tao, Tjuatja

Assistant Professors

Fahimi, Gou, Iqbal, Jung, Liang, Lu, Popa, Vasilyev, Wang, Xiao, Zhou

Senior Lecturers

Gibbs, Kenarangui, Russell, Stelmakh, Svihel

Lecturer

Kearny

Professors Emeritus

Chen, Fitzer, Fung, Smith, Spradlin

- Relevance of the student's undergraduate degree (background) to the EE curriculum.
- Rigor of the student's Bachelor's degree.
- Reputation of the University/College that the student received his/her previous degrees
- For Ph.D. applicants, the publications in scholarly conferences/ journals are optional but will improve both a student's chances of securing admission and receiving financial support.
- Three recommendation letters from individuals who can judge the probability of success of the student's graduate study.
- GRE scores of at least the following:
  a. Quantitative score
  ≥ 720 for M.S.
  or
  ≥ 750 for Ph.D.
  b. Verbal score ≥ 500
  c. Analytical Writing ≥ 4
- For an International student, an additional requirement beyond those stated above:
  TOEFL ≥ 560 for the paper and pencil test and 220 for the computer-based test

2. *Admission with Provisional status:* An applicant unable to supply all required official documentation prior to the admission deadline, but whose available documentation otherwise appears to meet admission requirements may be granted provisional admission.
3. *Deferred status:* A deferred decision may be granted when a file is incomplete.
4. *Denied Status:* An applicant that does not meet categories 1, 2 or 3 above will be denied admission.
5. *Fellowships:* Award of a fellowship will be based on the criteria required by the sponsor agency (including the graduate school) on a competitive basis.

Degree Requirements

Master's Degree

Master's degree requirements are described in the general catalog section titled Requirements for the Master's Degree/Degree Plans and Hours Required. The MSEE degree options available are thesis option, thesis substitute option and non-thesis option. The courses taken for all degrees must be distributed over four of the eight areas given in the Objective section. The MSEE program of work in electrical engineering may include up to nine graduate level semester hours of supporting courses outside the Electrical Engineering Department in math, science and engineering. The Graduate Advisor must approve supporting courses that are permitted on a degree plan. The courses approved outside electrical engineering may be used in lieu of one of the four distribution areas. The thesis option requires 24 semester hours plus six semester hours of thesis (EE 5698). The thesis substitute option requires 30 semester hours of which three semester hours must be in the thesis substitute project (EE 5392). The non-thesis option requires 36 semester hours. EE 5391 may not be used to satisfy course requirements in either the Thesis or Thesis-substitute degree plans. EE 5391 may be used one time as part of the non-Thesis degree plan. EE 5191 may not be used toward the MSEE or MENGR degrees. The M.Engr. emphasizes design engineering and management. This program requires 36 semester hours distributed in the same manner as the MSEE program, except that up to 12 semester hours outside the department may be included.

Doctoral Degree

The Ph.D. is a degree with emphasis on research. Requirements for the doctoral degree are described elsewhere in the general catalog section on Degree Offerings/Requirements. Permission to continue beyond the master's degree will be based on the grade point average and GRE scores as described above. Approval to continue in the doctoral program is given by satisfactory completion of the following procedure:

1. Obtaining the approval of a dissertation adviser, and
2. Passing the Diagnostic Examination. This exam will be over the four Technical Proficiency Courses.

The course requirements for the Diagnostic Examination should be completed during the M.S. degree or during the first 30 graduate hours required for entrance into the Ph.D. program. If the student is required to take some of the Technical Proficiency Courses in order to take the Diagnostic Exam, these hours will be in addition to the required advanced level course specified later.

This procedure must be completed within the year of coursework toward the Ph.D. A student not having attempted the Diagnostic Examination by this time will be allowed one more opportunity to take the examination during the next full semester.

The program of work is expected to include a minimum of 18 semester hours of advanced graduate level coursework beyond the master's degree and sufficient dissertation semester hours as required to complete the dissertation. The supervising professor may require additional coursework beyond the 18 hour minimum if deemed necessary to accomplish the research required for the dissertation. These courses may include graduate level mathematics, science, or engineering relevant to the student's dissertation program, but only with approval of the Graduate Advisor.

The status of a doctoral candidate is approved for students who have passed an oral Comprehensive Examination (a comprehensive dissertation proposal) and submitted a Final Program of Work. The Comprehensive Examination will be required by the time the student has completed the required coursework. If the student fails the examination, he/she would be given one more chance to pass it no later than during the following semester. Upon completion of the Comprehensive Examination, the candidate should enroll in the dissertation course (EE 6399, EE 6699, or EE 6999) continuously until defense of the dissertation. The last semester the student must be enrolled in EE 6999. This ordinarily requires approximately 30 semester hours of dissertation credit.

Continuation

The Electrical Engineering Graduate Program, in fulfillment of its responsibility to graduate highly qualified engineers, has established certain policies and procedures. In addition to the requirements of the Graduate School listed elsewhere, to continue in the program each electrical engineering graduate student must maintain at least a B (3.0) GPA in all electrical engineering coursework and at least a B (3.0) GPA in all coursework for M.S. students. A student working toward a Ph.D. must maintain a 3.5 GPA in all electrical engineering coursework and at least a 3.5 GPA in all coursework.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Technical Areas, Courses, and Technical Proficiency Courses

MSEE students must take courses from four Technical Areas. Non-thesis students must take one technical proficiency course from each of three areas, and earn at least a 3.3 GPA in those three courses.

Technical Area	Courses	Technical Proficiency Courses
1. Digital and Microprocessor/ Controller Systems	EE 5313 EE 5314 EE 5315 EE 6313 EE 6314	EE 5313 - Microprocessor Systems Approved Substitution: EE
2. Solid State Devices, Circuits and Systems	EE 5305 EE 5310 EE 5311 EE 5312 EE 5316 EE 5317 EE 5318 EE 5340 EE 5341 EE 5342 EE 5345 EE 5346 EE 5347 EE 5348 EE 6318 EE 6341	EE 5305 - Advanced Electronics EE 5310 - Digital VLSI Design EE 5340 - Semiconductor Device Theory EE 5341 - Fundamentals for Semiconductor Devices Approved Substitution: EE
3. Systems, Controls and Automated Manufacturing	EE 5301 EE 5303 EE 5304 EE 5307 EE 5320 EE 5321 EE 5322 EE 5323 EE 5324 EE 5325 EE 5326 EE 5328	EE 5307 - Linear Control Systems Theory EE 5320 - Control System Design EE 5328 - Instrumentation and Measurement Approved Substitution: EE
4. Electromagnetic Fields and Applications	EE 5306 EE 5331 EE 5332 EE 5333 EE 5334 EE 5335 EE 5336 EE 5337	EE 5306 - Electromagnetic Theory EE 5331 - Microwave Systems Engineering Approved Substitution: EE
5. Digital Signal and Image Processing	EE 5302 EE 5350 EE 5351 EE 5352 EE 5353 EE 5354 EE 5355 EE 5356 EE 5357 EE 5358 EE 6356	EE 5302 - Random Signals and Noise EE 5350 - Digital Signal Processing EE 5356 - Digital Image Processing Approved Substitution: EE
6. Telecommunications and Information Systems	EE 5360 EE 5361 EE 5362 EE 5363 EE 5364 EE 5365 EE 5366 EE 5367 EE 5368 EE 6362 EE 6363 EE 6364 EE 6365 EE 6367 EE 6368	EE 5360 - Data Communication Engineering EE 5362 - Digital Communications Approved Substitution: EE
7. Power Systems and Industrial Power Electronics	EE 5308 EE 5371 EE 5372 EE 5373 EE 5374 EE 5375 EE 5376 EE 5377 EE 5378 EE 6372 EE 6375	EE 5308 - Power System Modeling and Analysis EE 5371 - Power System Transmission I Approved Substitution: EE
8. Optical Devices and Systems	EE 5380 EE 5382 EE 5383 EE 5384 EE 5385 EE 5386 EE 5387 EE 5388	EE 5380 - Principals of Photonics and Optical Engineering EE 5386 - Integrated Optics Approved Substitution: EE
9. Nanotechnology and MEMS – Materials and Devices	EE 5343 EE 5344 EE 5381 EE 6342 EE 6343 EE 6344 EE 6345	EE 5343 - Silicon IC Fab Technology EE 5344 - Introduction to MEMS EE 5381 - Foundations in Semiconductors Approved Substitution: EE

Electrical Engineering (EE)

5190. ELECTRICAL ENGINEERING GRADUATE SEMINAR (1-0). Topics vary from semester to semester. May be repeated for credit. Graded F, P. Prerequisite: graduate standing or consent of the department.

5191. ADVANCED STUDY IN ELECTRICAL ENGINEERING (1-0). Individual research projects in electrical engineering. Prior approval of the EE Graduate Advisor is required for enrollment. A written report is required. Graded F, P, R.

5301. ADVANCED ENGINEERING ANALYSIS (3-0). Analytical and numerical techniques for solving various types of engineering problems. Topics include matrix reduction by Gaussian elimination, similarity transformation, singular value decomposition, Jordan normal form, etc. Analysis techniques include Fourier series and transforms, fast Fourier transform, discrete convolution, complex analysis, least squares, and others.

5302. RANDOM SIGNALS AND NOISE (3-0). Probability, random variables, and stochastic processes in physical systems. Topics include probability space, discrete and continuous random variables, density and conditional density functions, functions of random variables, mean-square estimation, random signals, system response, optimum system design, and Markov processes.

5303. ENGINEERING MANAGEMENT (3-0). The management of the engineering function in high-technology industry with principal emphasis on the historical development of industrial management principles, decision-making, and planning.

5304. NETWORK SYNTHESIS (3-0). Introduction to network synthesis of circuits using lumped, linear, passive, and operational amplifiers. Topics include realizability theory, synthesis of driving point impedances and two port circuits, passive and active filters, and Hilbert Transforms.

5305. ADVANCED ELECTRONICS (3-0). Advanced study of solid-state devices and integrated circuits. Analysis, design and simulation of analog integrated circuits including biasing, gain stages, active loads, power amplifiers, operational amplifiers and wideband amplifiers.

5306. ELECTROMAGNETIC THEORY (3-0). Advanced study of electromagnetic theory, its content, methods, and applications. Topics include theorems in electromagnetic theory, cylindrical and spherical wave functions, waveguides, integral equation methods, scattering and diffraction.

5307. LINEAR SYSTEMS ENGINEERING (3-0). Topics include state-space description of dynamic systems, analysis and design of linear systems, similarity transformation, state feedback, state observers, and matrix characterization of multivariable systems.

5308. POWER SYSTEM MODELING AND ANALYSIS (3-0). Fundamental concepts for modeling transmission lines, distribution lines, power system generators, power transformers and power system load. The method of symmetrical components is discussed. Simulation of power systems during normal and abnormal conditions are presented. The philosophy of deregulation regarding separation of power systems into generation, transmission and distribution companies is introduced.

5309. TOPICS IN ELECTRICAL ENGINEERING (3-0). Material may vary from semester to semester. Topics are selected from current areas of electrical engineering interest. May be repeated when topic changes.

5310. DIGITAL VLSI DESIGN (3-0). Introduction of VLSI digital circuit design methodology and processing technology. Application of various design software packages for circuit analysis and layout. Design of basic CMOS digital logic circuits. Implementation of digital logic design at the transistor level.

5311. VLSI SIGNAL PROCESSING ARCHITECTURES (3-0). Design and synthesis of DSP and telecommunication systems using integrated modeling, design, and verification tools. Exploration of high-level architectural transformations that can be used to design families of DSP architectures for a given signal processing algorithm. Prerequisite: EE 5350.

5312. CMOS RFIC DESIGN (3-0). Transceiver design for wireless communications using advanced CMOS technology. Emphasis on full-custom chip design, RFIC design concepts. Transceiver architectures. Topics include low noise amplifier, mixer, oscillator, frequency synthesizer, and power amplifier. A project is required, including design, simulation and layout using an IC design tool. Prerequisite: EE 5305 or EE 5318.

5313. MICROPROCESSOR SYSTEMS (3-0). Hardware/software development techniques for microprocessors and their programmable peripherals, with emphasis on multi-byte width memory design, throughput issues including DMA controller design, co-processor operation, interrupt-driven i/o, oscillators and timer peripherals, analog signal interfacing, and digital buses and interfaces. Topics include: code efficiency issues, hardware-software interactions, and design of memory systems, DMA controllers, and real-world interfacing.

5314. EMBEDDED MICROCONTROLLER SYSTEMS (3-0). Hardware/software development techniques for microcontroller systems with emphasis on hardware-software interactions, programming internal peripherals, and real-time control and conditioning of external devices. Other topics include: code efficiency, pin reuse, interrupt-driven processing, USART operations, 12C and SPI bus peripherals, and use of internal peripherals.

5315. DSP MICROPROCESSORS (3-0). Device architectures and various aspects of hardware/software design will be presented for dominant families of function-specific, application-specific and general-purpose digital signal processors (DSPs) from leading manufacturers. Special attention will be given to problems related to real-time acquisition and processing of analog data (audio, video, RF, etc.), including design principles for the state-of-the-art data conversion interfaces. Prerequisite: EE 5313.

5316. CMOS MIXED SIGNAL IC DESIGN (3-0). Design of CMOS mixed signal ICs with emphasis on full custom chip design. Comparators, switched-capacitor circuits, converter architectures, analog-to-digital converters, digital-to-analog converters, integrator-based filters. A project is required, including design, simulation and layout using an IC design tool. Prerequisite: EE 5305 or EE 5318.

5317. ADVANCED DIGITAL VLSI DESIGN (3-0). Design of logical gates using CMOS technologies; static and dynamic circuit techniques; advanced techniques in logic circuits; general VLSI system components design; arithmetic circuits in VLSI; low power design; chip layout strategies. A design project using computer tools is required. Prerequisite: EE 5310.

5318. ANALOG CMOS IC DESIGN (3-0). CMOS analog IC design and layout issues; CMOS current mirror and opamp design; noise analysis and modeling; comparators, sample-and-holds and voltage references; switch-capacitor circuits. Prerequisite: EE 5305.

5319. TOPICS IN DIGITAL SYSTEMS (3-0). Formal instruction in selected topics in digital systems and microcomputers. May be repeated when topic changes.

5320. CONTROL SYSTEM DESIGN (3-0). Design, analysis, and computer simulation of digital and continuous control systems. Controller design using classical techniques and modern state-variable techniques, including linear quadratic regulator, polynomial, and observer design. Discrete systems and Z-transform theory. Use of high-level computer programs in system analysis and design will be emphasized. A prior introductory systems course, such as EE 5307, is desirable.

5321. OPTIMAL CONTROL (3-0). Design of optimal control systems. Topics include optimization under constraints, linear quadratic regulators, Ricatti's equation, suboptimal control, dynamic programming, calculus of variations, and Pontryagin's minimum principle. A prior introductory systems course, such as EE 5307, is desirable.

5322. INTELLIGENT CONTROL SYSTEMS (3-0). Principles of intelligent control including adaptive, learning, and self-organizing systems. Neural networks and fuzzy logic systems for feedback control. Mobile robots. Discrete event systems and decision-making supervisory control systems. Manufacturing work-cell control. Advanced sensor processing including Kalman filtering and sensor fusion. A prior introductory systems course, such as EE 5307, is desirable.

5323. NONLINEAR SYSTEMS (3-0). Analysis and design of nonlinear systems. A general course in nonlinear systems with examples from multiple engineering and science disciplines. Topics include phase planes, Lyapunov's theory, describing functions, iterative maps, chaos and fractals, and nonlinear optimization methods.

5324. DESIGN OF DIGITAL CONTROL SYSTEMS (3-0). Sampling and data reconstruction. Z-transforms and state variable descriptions of discrete-time systems. Linear quadratic optimal control and state estimation. Quantization and other nonlinearities. Real-time control systems. Digital feedback control systems. Constructing discrete-time mathematical model system. Analysis of system behavior using discrete-time model and evaluation of the system performance. Discrete controller design techniques such as root locus, frequency response, and state space techniques. Evaluation and testing of system performance using digital simulations. (Also listed as AE 5380 and ME 5380).

5325. ROBOTICS (3-0). Principles of kinematics, dynamics, and control of robot manipulators and mobile robots. Analysis of dynamical equations and design of robot control systems using modern nonlinear systems techniques. Computer simulation of robotic and mobile robot systems. Path planning, workcell coordination and control. Robot languages and programming. Also listed as ME 5337.

5326. FUZZY LOGIC (3-0). Introduction to fuzzy logic system (FLS) systems theory, design, and applications. Topics include fuzzy logic and crisp logic, fuzzy rules and interference, fuzzification, defuzzification, non-singleton FLS, type 1 and type 2 FLS, TSK FLS, applications to signal processing, telecommunications, control, and decision making.

5327. SYSTEM IDENTIFICATION AND ESTIMATION (3-0). Introduction to parametric and non-parametric modeling and identification and estimation methods for linear and nonlinear systems. Methods covered include linear and non-linear least squares, LTI (linear time-invariant) black-box models, empirical transfer function estimate, state-space and frequency domain model reduction methods, Kalman filtering and self-tuning adaptive control. Introductory systems and signals courses, such as EE 5307 and EE 5302, are desirable.

5328. INSTRUMENTATION AND MEASUREMENT (3-0). Measurement principles and design of sensor and measurement systems. Topics include computer-based measurement systems, sensor design, signal conditioning, data acquisition, smart sensors, and mechatronics. Techniques for measuring quantities encountered in robotics and automation, manufacturing, biomedical, and other applications. A previous course in analog or digital electronics is desirable.

5329. TOPICS IN SYSTEMS (3-0). Formal instruction in selected topics in systems engineering, such as advanced controls, systems performance, graphics subsystems design, robotics, and computer vision. May be repeated when topic changes.

5331. MICROWAVE SYSTEMS ENGINEERING (3-0). Topics include frequency planning, design and performance analysis of transmitter and receiver circuits for communications and radar. Emphasis is on design using commercially available mixers, amplifiers, oscillators, and modulation circuits. Analysis includes receiver noise figure, distortion and path loss effects.

5332. ANTENNA SYSTEM ANALYSIS (3-0). Fundamental study of antennas and antenna design techniques. Topics include numerical analysis of wire antennas; aperture antennas; geometrical theory of diffraction; horns and reflector antennas; and antenna synthesis and measurements. Prerequisite: EE 5306.

5333. WIRELESS AND CELLULAR PROPAGATION (3-0). Fundamentals of VHF, UHF, and microwave propagation. Propagation over irregular terrain. Propagation in built-up areas. Propagation modeling and prediction tools. Multipath phenomena. Signal statistics. Prerequisite: EE 5302 and EE 5306.

5334. FUNDAMENTALS OF RADAR REMOTE SENSING (3-0). Active and passive remote sensing systems, platforms for remote sensing, radar equation, interaction of electromagnetic wave with matter, radar cross section, scattering from area extensive targets, surface scattering, volume scattering, radiative transfer theory, radar data collection and analysis, retrieval of target parameters.

5335. FUNDAMENTALS OF RADAR IMAGING (3-0). Radar system, antenna system, radar equation, electromagnetic waves scattering from targets, radar signal and noise, detection and extraction of signal from noise or clutter, range and Doppler profiles, radar image formation, real aperture radar imaging, SAR imaging, ISAR imaging, image distortion, superresolution radar imaging techniques.

5336. ELECTROMAGNETIC INTERFERENCE AND COMPATIBILITY (2-1). Fundamentals principles involved in grounding and shielding, proper layout of high-speed digital circuitry, reducing crosstalk, conducted and radiated interference mechanisms, electromagnetic compatibility (EMC), electrostatic discharge (ESD), objectives and techniques to apply a systematic problem solving approach to replace "trial and error" methods. Circuit construction and measurement.

5337. FABRICATION AND MEASUREMENT OF MICROWAVE CIRCUITS (3-0). Experimental techniques used in measuring circuits at high frequencies as well as fabrication of microwave circuits using photo lithography. Prerequisite: EE 5347 or EE 5348.

5339. TOPICS IN ELECTROMAGNETICS (3-0). Formal instruction in selected topics in electromagnetics. May be repeated when topic changes.

5340. SEMICONDUCTOR DEVICE THEORY (3-0). Quantum mechanics applicable to semiconductor theory. Energy band theory, density of states and effective mass theory. Intrinsic and extrinsic semiconductors, equilibrium statistics for electrons and holes. Transport, generation and recombination of excess carriers. Device equations and physics. Theory and performance of p-n and Schottky diodes, bipolar and MOS transistors.

5341. ELECTRONIC MATERIALS: FUNDAMENTALS AND APPLICATIONS (3-0). Fundamental theory required for the study of electronic materials: waves and particles, quantum mechanics, crystal structures, chemical bonds, and band theory. Materials and properties considered will be metals, semiconductors, and dielectrics including effective mass, doping, and carrier statistics, and electronic, dielectric, magnetic, and optical properties of materials as applied to integrated circuits, wireless communication, optoelectronics, optical communication, and data storage.

5342. SEMICONDUCTOR DEVICE MODELING AND CHARACTERIZATION (2-3). Device models and characterization procedures for the pn junction and Schottky diodes, the BJT, JFET, MOSFET, HBT, and optical sources and detectors. SPICE derived and higher level circuit simulator models will be presented. Prerequisite: EE 5340 or EE 5341.

5343. SILICON INTEGRATED CIRCUIT FABRICATION TECHNOLOGY (2-3). Basic integrated circuit fabrication processes: crystal growth (thin film and bulk), thermal oxidation, dopant diffusion/implantation, thin film deposition/etching, and lithography. Introduction to process simulators, such as SUPREM. Fabrication and characterization of resistors, MOS capacitors, junction diodes and MOSFET devices. Prerequisite: Pass the NanoFAB Safety and Clean Room Protocol test.

5344. INTRODUCTION TO MICROELECTROMECHANICAL SYSTEMS (MEMS) AND DEVICES (3-0). Develops the basics for microelectromechanical devices and systems including microactuators, microsensors, and micromotors, principles of operation, different micromachining techniques, and thin-film technologies as they apply to MEMS.

5345. SEMICONDUCTOR DEVICE AND PROCESS SIMULATION (2-3). Analytical simulation theory and applications. Device simulation of pn junctions, bipolar junction transistors and MOS devices. Process simulation of oxidation, ion implantation and diffusion. Prerequisite: EE 5340.

5346. MICROWAVE DEVICES (3-0). Device physics and applications of microwave semiconductor devices and vacuum tubes. Topics include operation, modeling and characterization of MESFETs and HEMTs, microwave diodes, and microwave vacuum tubes. Prerequisite: EE 5340 and EE 5341.

5347. MICROWAVE CIRCUITS (3-0). Theory of microwave circuit design; techniques include use of Kuroda identities, Richard's transformation, and ABCD parameters; topics include design of couplers, transformers, filters, and resonators in coaxial lines, strip lines, and microstrip. Prerequisite: EE 5348.

5348. RADIO-FREQUENCY CIRCUIT DESIGN (3-0). Design of lumped-element radio-frequency circuits operating at frequencies to 2 GHz. Impedance-matching, s-parameter design of amplifiers and oscillators, RF mixers. Other topics include noise theory (thermal and phase noise) and phase-locked loops. Prerequisite: EE 5305.

5349. TOPICS IN INTEGRATED CIRCUIT TECHNOLOGY (3-0). Formal instruction in selected topics in integrated circuit technology. May be repeated when topic changes.

5350. DIGITAL SIGNAL PROCESSING (3-0). Time and frequency domain analyses of linear time invariant systems. Stability analyses of causal and non-causal systems using the Z-transform. FIR digital filter design. Design of frequency selective IIR digital filters using frequency transformations and the bilinear transform. Design of infinite and finite impulse response filters.

5351. DIGITAL VIDEO CODING (3-0). Fundamentals, principles, concepts and techniques of data compression such as Huffman, Lempel-Ziv, Arithmetic, Facsimile, Transform, DPCM, VQ, and Hybrid coding and applications in ITU, ISO, and IEC standards related to audio, video, and image compression.

5352. STATISTICAL SIGNAL PROCESSING (3-0). Estimation of autocorrelations, cross-correlations and power spectral densities. Least squares filter design via Toeplitz recursion and AR modeling. Algorithm development using maximum likelihood and minimum mean square error approaches. Lower bounds on estimation error variance. Adaptive noise cancellation. Prerequisite: EE 5350 and EE 5302.

5353. NEURAL NETWORKS (3-0). Introduction to nonlinear networks for regression/approximation, classification, and clustering. Support vector machines. Training algorithms, methods for evaluating network performance. Applications in classification, estimation and forecasting. Prerequisite: EE 5350 or concurrent registration.

5354. WAVELETS AND FILTER BANKS (3-0). Fundamentals of signal decomposition, discrete multirate systems and polyphase structures. Time-frequency analysis and multiresolution signal representation. Two-channel filter banks, dyadic wavelets, and scaling and wavelet functions. M-channel filter banks and their lattice structures. Applications in signal de-noising, compression and communications. Prerequisite: EE 5350.

5355. DISCRETE TRANSFORMS AND THEIR APPLICATIONS (3-0). Principles and properties of discrete transforms such as discrete Fourier, discrete cosine, Walsh-Hadamard, slant, Haar, discrete sine, discrete Hartley, LOT and Wavelet transforms, and their applications in signal and image processing.

5356. DIGITAL IMAGE PROCESSING (3-0). Digital image processing as applied to image sampling and quantization, image perception, image enhancement, image restoration, image reconstruction from projections, and filtering and image coding. Prerequisite: EE 5350.

5357. STATISTICAL PATTERN RECOGNITION (3-0). Introduction to statistical pattern recognition. Deformation invariant and deformation variant feature extraction for class separability. Feature selection using transformation and subsetting. Decision theory and statistical learning theory. Classifier design using Bayes, nearest neighbor, and regression-based approaches. Sensor fusion. Prerequisites: EE 5350 and EE 5302.

5358. COMPUTER VISION (3-0). Techniques for the interpretation, analysis, and classification of digital images. Methods for segmentation, feature extraction, object recognition, stereo vision and 3-D modeling. A research project will be assigned.

5359. TOPICS IN SIGNAL PROCESSING (3-0). Formal instruction in selected topics in signal processing. May be repeated when topic changes.

5360. DATA COMMUNICATIONS ENGINEERING (3-0). Principles underlying communication network design, including physical layer, MAC (media access control) layer modeling and engineering, and data link layer. Queuing theory. Internet structure, Internet protocol models and engineering. Physical layer description will include modulation, FEC (forward error correction), cyclic and Trellis coding. MAC layer modeling will include CSMA/CD (Carrier Sense Multiple Access/Collision Detection), ALOHAS, and other splitting algorithms.

5361. FUNDAMENTALS OF TELECOMMUNICATION SYSTEMS (3-0). Analysis of analog and digital communication techniques including amplitude modulation, frequency modulation, and pulse code modulation. Time-domain and frequency domain multiplexing. Analog and digital noise analysis, information theory, design of communication systems.

5362. DIGITAL COMMUNICATIONS (3-0). Fundamental principles underlying the transmission of digital data over noisy channels. Basics of source coding techniques including entropy coding, Lempel-Ziv. Channel capacity. Spectral analysis of digital modulation techniques. Optimum receiver design and error probability performance of commonly used modulation schemes. Applications to lightwave and wireless systems.

5363. TELECOMMUNICATION SYSTEMS (3-0). Basics of telecommunications and telephone networks. Switching and transmission systems. Circuit and packet switching. Call processing. Common channel signaling systems. Queuing theory and applications. OSI-layered (Open Systems Interconnection) reference architecture. ISDN (Integrated Services Digital Network).

5364. INFORMATION THEORY AND CODING (3-0). Transmission of information over noisy channels, Shannon's coding theorems, techniques of coding and decoding for reliable transmission over noise channels, error-detecting, and error-correcting codes.

5365. FIBER OPTIC TRANSMISSION SYSTEMS (3-0). Propagation in optical fibers, characteristics and manufacture of fibers, semi-

conductor lightwave sources and detectors, optical transmitters and receivers, lightwave transmission systems for wide area and local area networks. Prerequisite: EE 5306 and EE 5361.

5366. COMMUNICATION SATELLITE SYSTEMS (3-0). Introduction of space communications, satellite orbits and their effect on communication system design. Atmospheric propagation effects. Communication link analysis, modulation, multiplexing, multiple access, encoding and forward error correction in satellite links. Design of communication satellites, earth station and their principal subsystems. Prerequisite: EE 5361.

5367. WIRELESS SYSTEMS AND PROPAGATION MODELING (3-0). Fundamental principles and techniques of electromagnetic wave propagation as it applies to current wireless and cellular systems, development of models of propagation and their application in wireless system design, characteristics of microwave devices used in wireless systems, system and traffic design techniques used in wireless systems.

5368. WIRELESS COMMUNICATION SYSTEMS (3-0). Fundamental principles of radio system design and propagation. Basics of cellular systems, environment, propagation models, traffic models and spectral capacity. Multiple-access techniques including FDMA (frequency division multiple access), TDMA (time division multiple access), CDMA (code division multiple access). Analog and digital modulation techniques used in wireless communication and problems with RF (radio frequency) interference.

5369. TOPICS IN COMMUNICATIONS (3-0). Formal instruction in selected topics in communications. May be repeated when topic changes.

5371. POWER SYSTEM PLANNING, OPERATION, AND CONTROL IN A DEREGULATED ENVIRONMENT (3-0). Current market structure and practices are discussed. The issues of system planning, operation, and control in a deregulated environment are addressed. Prerequisite: EE 5308.

5372. CONGESTION MANAGEMENT (3-0). Phenomena of congestion and transmission pricing are presented. Thermal related congestion, such as power flow, and stability related congestion, such as voltage stability, transient stability, and dynamic stability, are covered. The effects of reactive power are discussed. Reliability and security issues of power transmission systems are presented. Congestion management and congestion relief measures are discussed. Prerequisite: EE 5308.

5373. UNBUNDLING SERVICES OF A DEREGULATED POWER SYSTEM (3-0). The fundamental operating functions of a deregulated power system are presented. Unbundling of these functions and cost allocations are discussed. Topics of ancillary services, power marketing, price forecasting, and load forecasting are covered. Prerequisite: EE 5308.

5374. POWER SYSTEM PROTECTIVE RELAYING (2-3). Fundamental understanding of symmetrical components, applications of symmetrical components in system protection, philosophy of power system protection, various protective relay systems, and the special considerations in applying the microprocessor based relays are covered. Experiments utilizing the Power System Simulation Laboratory are required.

5375. POWER SYSTEM DISTRIBUTION (3-0). The basic functions of a Distribution Company are presented. Load representation, distribution load flow and the philosophy of simulation for a distribution system are discussed in detail.

5376. POWER SYSTEM RELIABILITY IN PLANNING AND OPERATION (3-0). Loss of Load indices, Loss of Energy indices, Frequency and Duration methods, Interconnected Reliability methods, and Composite Generation and Transmission Reliability methods will be covered.

5377. PROGRAMMABLE LOGIC CONTROLLERS IN INDUSTRIAL AUTOMATION (2-3). The application of Programmable Logic Controllers (PLC) in industrial automation and energy systems monitoring will be covered. Transducers, Supervisory Control and Data Acquisition (SCADA) systems, and Distributed Control Systems (DCS) will be discussed. Material covered is also applicable to various mechanical and civil engineering fields, thus enrollment of graduate engineering students from other disciplines is welcome. Experiments utilizing the Power System Simulation Laboratory are required.

5378. POWER QUALITY (2-3). Principles of harmonics and filtering, source of voltage surges and surge protection, causes of voltage sags, flickers, and interruptions, and voltage supporting devices, and utility and end-user strategies for improving power quality are covered.

5379. TOPICS IN POWER SYSTEM ENGINEERING (3-0). Formal instruction in selected topics in power system engineering. May be repeated when topic changes.

5380. PRINCIPLES OF PHOTONICS AND OPTICAL ENGINEERING (3-0). Optical fields with applications to laser, optical fibers, and photonic signal processing. Encoding, manipulating, transmitting, storing, and retrieving information using light. Light propagation including isotropic and birefringent optical media, dielectric interfaces, interference and diffraction, Gaussian beams, optical cavities and principles of laser action, optical waveguides and fibers, electro- and acousto-optic modulation, and holography. Design, analysis and application of optical devices in communications and signal processing.

5381. FOUNDATIONS IN SEMICONDUCTORS (3-0). Electronic properties of semiconductors affecting semiconductor devices: quantum behavior; Kronig-Penny model; energy bands; carrier statistics; density of states; one, two, and three dimensional systems; carrier transport; thermoelectric effects; surface and bulk generation-recombination statistics; continuity equations and their solutions; optical properties; semiconductor characterization techniques.

5382. OPTICAL DETECTORS AND RADIATION (3-0). Basic principles of optical detectors used in imaging and communications. The course focuses on infrared detectors. Geometric optics, blackbody radiation, radiometry, photon detection mechanisms, thermal detection mechanisms, noise in optical detectors, figures of merit for detectors, photovoltaic detectors, photoconductive detectors, bolometers, pyroelectric detectors, and quantum well detectors.

5383. SOLAR ELECTRICITY AND PHOTOVOLTAICS (3-0). Solar radiation and other forms of renewable energy: wind, tide, biomass and hydropower. Fundamental theory of photovoltaics: crystal structures, band theory, semiconductors, doping, carrier statistics, optical absorption, and p-n junctions. Status of solar cell, including cost, optical design, system engineering, silicon solar cells and thin film solar cells. Prospects of solar cells, regarding low-cost and high-efficiency solar cells. Prerequisite: EE 5340 or EE 5341.

5384. OPTOELECTRONIC DEVICES FOR COMMUNICATION (3-0). Electronic and optical processes in semiconductors. Light emitting diodes. Laser diodes: structures, properties and operating principles. Photodetectors and solar cells. Noise and the photoreceiver. Optoelectronic modulators and switching devices. Systems needs and new device challenges.

5385. NONLINEAR OPTICS (3-0). Nonlinear optical processes and applications in crystals, optical fibers and waveguides. Second- and third- order nonlinear susceptibility, symmetry properties, coupled-wave propagation, phase-matching techniques, sum- and difference-frequency generation, parametric amplification, four-wave mixing, self- and cross-phase modulation, soliton propagation, and Raman scattering. Prerequisite: EE 5380.

5386. INTEGRATED OPTICS (3-0). Theory and techniques of integrated optics including optical waveguiding, coupling, modulation, grating diffraction, detection and integrated systems. Prerequisite: EE 5306.

5387. FOURIER OPTICS AND HOLOGRAPHY (3-0). Theory of Fourier optics and holography including scalar diffraction theory, Fresnel and Fraunhofer diffraction, Fourier transforming properties of lenses, optical imaging systems, spatial filtering, and the theory and applications of holography. Prerequisite: EE 5306.

5388. LASERS (3-0). Propagation of optical rays and waves, Gaussian laser beams, laser resonators, atomic systems, lasing and population inversion, laser amplifiers, practical gas and solid-state lasers including continuous-wave and pulsed lasers, mode locking, Q-switching, frequency doubling, tunable lasers, semiconductor lasers, vertical-cavity lasers and applications of lasers. Prerequisite: EE 5306.

5389. TOPICS IN OPTICS (3-0). Formal instruction in selected topics in optics. May be repeated when topic changes.

5391. ADVANCED STUDY IN ELECTRICAL ENGINEERING (3-0). Individual research projects in electrical engineering. Prior approval of the EE Graduate Advisor is required for enrollment. A written report is required. Graded F,P,R.

5392. PROJECT IN ELECTRICAL ENGINEERING (3-0). Individual research projects performed for fulfilling the requirements of the thesis substitute option. Prior approval of the EE graduate advisor is required for enrollment. A written and oral report is required. Graded F, P, R.

5398. THESIS (3-0). Graded F, R. Prerequisite: Graduate standing in electrical engineering.

5698. THESIS (6-0). Graded F, P, R. Prerequisite: Graduate standing in electrical engineering.

6313. ADVANCED MICROPROCESSOR SYSTEMS (3-0). Study of the advanced microprocessor architectures including 32/64-bit RISC and CISC families of microprocessors will be compared based on detailed architectural analysis of the selected devices. Topics include: address/instruction pipelines, burst cycles, memory caching and cache coherency issues, register renaming, speculative instruction execution and other performance-oriented techniques. Prerequisite: EE 5313.

6314. ADVANCED EMBEDDED MICROCONTROLLER SYSTEMS (3-0). Study of advanced microcontroller system designs with an emphasis on multi-tasking, real-time control of devices. Topics include: design of real-time control systems, programmable logic controller (PLC) hardware, USB peripherals and network appliances. Prerequisite: EE 5314.

6318. ADVANCED ANALOG VLSI SYSTEMS (3-0). Data converter design: Nyquist rate D/A and A/D converters and oversampling converters; continuous time filters; phase lock loops; low power analog circuit design techniques.

6323. NONLINEAR AND ADAPTIVE CONTROL (3-0). Advanced design of nonlinear and adaptive systems. Topics include phase planes, Lyapunov's theory, describing function, feedback linearization, parameter estimation, self-tuning, and model reference adaptive systems. Also offered as AE 5337, ME 5374. Credit will be granted only once. Prerequisite: EE 5323.

6327. KALMAN FILTERING (3-0). Kalman filter design and implementation. Optimal filtering for discrete-time and continuous-time dynamical systems with noise. Wiener filtering. State-space determination. Also offered as AE/ME 5336. Credit will be granted only once. Prior introductory systems or identification course, such as EE 5307 or EE 5327, is desirable.

6341. FEEDBACK AMPLIFIERS (3-0).

6342. ADVANCED QUANTUM DEVICES (3-0). Advanced concepts in quantum theory of semiconductors. Epitaxial growth and characterization of heterostructures, quantum wells, and superlattices including strained layers; electronic and optical properties of these structures; electronic and optoelectronic devices based on quantum wells and superlattices. Prerequisite: EE 5340 and EE 5341.

6343. QUANTUM WELL LASERS (3-0). Introduction to semiconductor heterostructures and quantum wells. Quantum theory of optical processes and laser operation. Threshold, spectral, and dynamical behavior. Modern laser structures and technologies, including strained-layer and surface emitting lasers. Prerequisite: EE 5340 and EE 5341.

6344. NANOSYSTEMS AND QUANTUM ELECTRONIC DEVICES (3-0). Design, analysis, and techniques for conceptualizing and fabricating nanoscale systems. Role of quantum confinement and mesoscopic behavior, phase coherence, quantum transport, single electron devices, semiconductor heterostructures, self-assembly and molecular electronic schemes, lithographic methods, atomic epitaxy, and surface analysis techniques. Prerequisite: EE 5340 and EE 5341.

6345. ADVANCED MEMS – MICROELECTROMECHANICAL SYSTEMS (3-0). Microelectromechanical systems (MEMS) and devices including micro-actuators and optical MEMS. Application strategy of MEMS; fabrication and design; actuation mechanism and architectures; optical sensor and communication applications. Mask layout and hands-on design, fabrication procedures, design rules, demonstrated examples, and integration architectures. Prerequisite: EE 5344.

6356. IMAGE AND VIDEO CODING (3-0). Fundamentals, principles, concepts, and techniques of data (image/video/audio) compression such as Huffman coding, arithmetic coding, Lempel-Ziv coding, facsimile coding, scalar and vector quantization, DPCM, PCM, sub-band coding, transform coding, hybrid coding and their applications. Prerequisite: EE 5350.

6362. ADVANCED DIGITAL COMMUNICATIONS (3-0). Digital communication systems design with intersymbol interference. Partial response signaling. Adaptive equalization. Viterbi decoding. Digital signaling on fading multi-path channels and wireless channels. Applications of error detecting and correction coding. Spread spectrum systems. Prerequisite: EE 5362.

6363. SPREAD SPECTRUM COMMUNICATION (3-0). Direct-sequence spread spectrum systems utilizing pseudonoise (PN) generators. PN sequences and their properties. Maximal length codes, Gold codes. Code acquisition techniques. Phase-locked loops and their applications in carrier tracking and code tracking. Performance of spread spectrum systems in jamming environments. Prerequisite: EE 5362.

6364. ADVANCED DATA NETWORKS (3-0). Network performance analysis, link and upper layer. Internet and ATM protocols, Internet routing and traffic management, ATM switch design and ATM traffic management. Prerequisite: EE 5360.

6365. ADVANCED FIBER OPTICS SYSTEMS (3-0). Laser modulation, design of high speed optical transmitters and receivers. Coherent detection systems, fiber and semiconductor optical amplifiers. Photonic switching, future technologies. Prerequisite: EE 5365.

6367. ADVANCED WIRELESS COMMUNICATIONS (3-0). Performance analysis of cellular systems with multipath propagation, diversity, equalization, smart antennas. Interference compensation and

signal separation in multiuser systems. Micro- and pico-cell design. Allocation of channels, hard and soft handoffs. Data transmission on mobile networks. Review of selected current and proposed systems. Prerequisite: EE 5368.

6368. SIMULATION OF COMMUNICATION SYSTEMS (3-0). Simulation methods of analysis of communications systems using C programming language and other languages. Analysis involving atmospheric point-to-point radio and cellular channels and fiber optic systems and their elements. Prerequisite: EE 5362, EE 5368, EE 5365, C, and UNIX.

6372. HIGH VOLTAGE ENGINEERING (3-0). Introduction to design, measurement and testing methods for high voltage systems. A study of electrical insulation materials and their properties, partial discharges and voltage breakdowns, electric field plotting methods, generation of high voltage test pulses, and high voltage measurement techniques.

6375. POWER ELECTRONICS ENGINEERING (3-0). Switched mode DC-DC converters, controlled rectifiers, commutated and resonant inverters. Also, performance evaluation of specific applications by means of state space analysis will be discussed. Prerequisite: Must have consent of instructor.

6381. NANOPHOTONICS (3-0). Introduction to nanophotonic materials, devices, systems integration, and applications. Principles of nanoscale structures, quantum dots, photonic crystals, near field optics, plasmonics and metamaterials. Design, modeling, synthesis and fabrication of nano-structures and devices. Scaling of photonic components and optoelectronic integration.

6397. RESEARCH IN ELECTRICAL ENGINEERING (3-0). Individually approved research projects leading to a doctoral dissertation in the area of electrical engineering. Graded F, P, R.

6399. DISSERTATION (3-0). Graded F, R.

6697. RESEARCH IN ELECTRICAL ENGINEERING (6-0). Individually approved research projects leading to a doctoral dissertation in the area of electrical engineering. Graded F, P, R.

6699. DISSERTATION (6-0). Graded F, R.

6997. RESEARCH IN ELECTRICAL ENGINEERING (9-0). Individually approved research projects leading to a doctoral dissertation in the area of electrical engineering. Graded F, P, R.

6999. DISSERTATION (9-0). Graded F, P, R.

Department of Industrial and Manufacturing Systems Engineering

ie.uta.edu

Area of Study and Degrees

Industrial Engineering
M.S., M.Engr., Ph.D.
Systems Engineering
M.S.

Master's Degree Plans

Thesis, Thesis Substitute and Non-Thesis (Industrial Engineering only)
Non-Thesis (Systems Engineering only)

Chair

D.H. Liles
420 Woolf Hall
817.272.3092

Graduate Advisors

Industrial Engineering
S. N. Imrhan
420 Woolf Hall
817.272.3092

Systems Engineering
D.H. Liles
420 Woolf Hall
817.272.3092

Graduate Faculty

Professors
Corley, Liles, Priest

Associate Professors
Chen, Huff, Imrhan, Rogers

Assistant Professors
Ferreira, Kim, Rosenberger

Senior Lecturer
Boardman

Programs in Industrial Engineering

The graduate program in industrial engineering is designed to provide the student with fundamental knowledge in the various areas of industrial engineering and with the opportunity to emphasize in a particular area. A student pursuing a master's or doctoral degree may specialize in any area of industrial engineering such as General Industrial Engineering, Operations Research and Applied Statistics, Manufacturing Systems, Logistics, Enterprise Systems, and Enterprise Management.

The Department also participates in a college-wide Manufacturing Certificate program. In addition, the Master of Science in Logistics Program and the Master of Science in Engineering Management Program are offered in partnership with the College of Business Administration. The Logistics and Engineering Management Programs, are discussed elsewhere in this catalog.

The Master of Science in Systems Engineering Program is discussed later in this section.

Admission Criteria

Applicants for the master's degree who hold a baccalaureate degree in engineering must meet the general requirements described below. Applicants not meeting all criteria may be admitted on provisional or probationary basis.

For applicants with no prior training in engineering, the same minimum criteria will apply. In addition, their records will be reviewed in relation to the intended program of study, and specific remedial work may be required.

The acceptance of applicants who have already received a master's degree in engineering will be based on the above-mentioned minimum criteria and results of graduate work.

Unconditional Admission Criteria

Unconditional Admission into the M.S. and Ph.D. programs in Industrial Engineering is granted if all of the following conditions are met.

- A GPA of at least 3.0 in the last 60 hours of undergraduate coursework or prior graduate work
- A minimum score of 550 on the GRE Quantitative section and 350 on the GRE Verbal section
- A minimum score of 3 on the analytical writing section for GREs taken after October 2002.
- A minimum score of 500 on the handwritten TOEFL (213 on the computer-based version or 79 on the TOEFL iBT) if English is not the applicant's native language.
- Adequate preparation in mathematics, science, and industrial engineering

Probationary Admission Criteria

Prospective students not meeting the conditions for unconditional admission may be granted probationary admission if their GPA is 2.6 or greater. Students granted probationary admission must maintain a GPA of at least 3.0 for the first 9 hours completed at UT Arlington. Other conditions, such as deficiency courses, may be specified by the Graduate Advisor.

Provisional Admission

An applicant unable to supply all required official documentation prior to the admission deadline, but whose available documentation otherwise appears to meet admission requirements may be granted provisional admission.

Deferral

The admission decision is deferred if sufficient information is not available.

Denial

Prospective students with a GPA below 2.6 may be denied admission at the discretion of the Graduate Advisor. The Graduate Advisor may grant probationary admission if other factors suggest a potential for success in the graduate program.

Continuation

The Industrial Engineering Graduate Program, in fulfillment of its responsibility to graduate highly qualified professional engineers, has established certain policies and procedures. In addition to requirements of the Graduate School listed elsewhere, to continue in the program each industrial engineering graduate student must:

- Maintain at least a B (3.0) overall GPA in all coursework taken as a graduate student , and
- Demonstrate suitability for professional engineering practice.

At such time as questions are raised by industrial engineering graduate faculty regarding either of the above, the student will be notified and will be provided the opportunity to respond to the Committee on Graduate Studies in Industrial Engineering. The Committee on Graduate Studies will review the student's performance and make a recommendation concerning the student's eligibility to continue in the program. Appeal of a decision on continuation may be made through normal procedures outlined in the section of this catalog entitled "Grievances Other than Grades."

Degree Requirements

Students with degrees in other engineering disciplines may qualify for graduate study in industrial engineering after the completion of prescribed deficiency courses. Entering graduate students who are not proficient in engineering economy, probability and statistics, operations research, or industrial engineering design and analysis may be required to take deficiency courses to provide an appropriate background for graduate study in industrial engineering. For applicants with no prior training in engineering, the same deficiency courses will apply. In addition, courses in mathematics, physics, computer science, and basic engineering may be required.

Each graduate student will be required to take six courses as part of an industrial engineering core curriculum. The rest of the student's program will be elective, subject to the approval of the student's supervisory committee. The core curriculum is as follows:

- Three hours of coursework in engineering statistics approved by the graduate advisor.
- Three hours of coursework in operations research approved by the graduate Advisor.
- Three hours of coursework in engineering economy approved by the Graduate Advisor.
- Nine hours of industrial engineering design approved by the Graduate Advisor.

A final examination covering the coursework is required for each master's candidate. In the option involving a thesis, this final examination will be oral and will also cover the thesis. The final examination involved in the other two options will be written and/or oral.

Master of Science

The Master of Science Degree is a research-oriented program which consists of a thesis option, thesis-substitute option, and a non-thesis option. M.S. degree requirements are given under the catalog section entitled "Advanced Degrees and Requirements."

Master of Engineering

The Master of Engineering Degree is an engineering practice-oriented program. The degree is a 36 credit-hour program in which a maximum of six credit hours may be earned by an acceptable design project report, internship, or additional coursework. Applicants for this degree must have a baccalaureate degree in an engineering discipline. M.E. degree requirements are given under the catalog section entitled "Advanced Degrees and Requirements."

Fast Track Program for a Master's Degree in Industrial Engineering

The Fast Track Program enables outstanding UT Arlington senior undergraduate students in Industrial Engineering to satisfy degree requirements leading to a master's degree in Industrial Engineering while completing their undergraduate studies. When senior-level students are within 15 hours of completing their undergraduate degree requirements, they may take up to 9 hours of coursework designated by the Industrial Engineering Program to satisfy both undergraduate and graduate degree requirements. In the limiting case, a student completing the maximum allowable hours (9) while in undergraduate status would have to take only 27 additional hours to meet minimum requirements for graduation.

Interested UT Arlington undergraduate Industrial Engineering students should apply to the Industrial Engineering Program when they are within 30 hours of completing their bachelor's degrees. They must have completed at least 30 hours at UT Arlington, achieving an overall GPA of 3.0 or better in all work done at UT Arlington and in the last 30 hours. Additionally, they must have completed 9 hours of specified foundation courses with a minimum GPA of 3.3 in those courses. Contact the Undergraduate Advisor or Graduate Advisor in Industrial Engineering for more information about the program.

B.S. to Ph.D. Program

The B.S. to Ph.D. track in Industrial Engineering requires 30 credit hours including 18 hours of diagnostic coursework, a three credit hour elective and 9 credit hours of research coursework. This is in addition to the Ph.D. requirements.

Doctor of Philosophy

The Ph.D. degree should normally require four years of full-time study or less after completion of the BS degree. A student's program will consist of coursework, independent study, and a dissertation in fields pertinent to the student's areas of interest. The program for each student will be planned by the student and a committee of faculty members. There is no foreign language requirement for the Ph.D. degree.

Students with undergraduate degrees in fields other than engineering will be required to take the necessary courses to establish a background in science, mathematics, and engineering. Ph.D. requirements are listed in the catalog section entitled "Advanced Degrees and Requirements."

Program in Systems Engineering

The Systems Engineering program is designed to provide students with both the fundamental and applied management and technical knowledge to support the development of complex systems. Systems Engineering is that branch of engineering that develops systems, where a system is a collection of elements that work together as a unit.

Systems Engineering considers the total systems life-cycle from customer requirements and concept through design and development, system use, system maintenance, and system disposal. A Systems Engineering curriculum must encourage a broad view rather than a focus on individual system elements or phases of development. This broad view, a systems view, enables better system performance and reduces the likelihood of unintended consequences.

Students may obtain a Master of Science in Systems Engineering and then pursue a Ph.D. in Industrial Engineering with a focus on Systems Engineering.

Admission Criteria

Unconditional Admission

Unconditional admission into the M.S. Systems Engineering program is granted if all of the following conditions are met.

- A GPA of at least 3.0 in the last 60 hours of undergraduate coursework or prior graduate work
- A minimum score of 550 on the GRE Quantitative section and 350 on the GRE Verbal section
- A minimum score of 500 on the handwritten TOEFL (213 on the computer-based version or 79 on the TOEFL iBT) if English is not the applicant's native language.
- Adequate preparation in mathematics, science, and engineering, or other appropriate field.
- A minimum of two years of industry experience

Probationary Admission Criteria

Prospective students who do not meet the conditions for unconditional admission are granted probationary admission if their GPA is 2.6 or greater. Students granted probationary admission must maintain a GPA of at least 3.0 for the first 9 hours completed at UT Arlington. Other conditions, such as deficiency courses, may be specified by the Graduate Advisor.

Provisional Admission

An applicant unable to supply all required official documentation prior to the admission deadline, but whose available documentation otherwise appears to meet admission requirements may be granted provisional admission.

Deferral

The admission decision is deferred if sufficient information is not available.

Denial

Prospective students with a GPA below 2.6 may be denied admission at the discretion of the Graduate Advisor. The Graduate Advisor may grant probationary admission if other factors suggest a potential for success in the graduate program.

Degree Requirements

The M.S. degree in Systems Engineering requires 36 hours of coursework. The coursework is in the Department of Industrial and Manufacturing Systems Engineering. The program includes such courses as:

Introduction to Systems Engineering and Analysis
Systems Engineering I
Systems Engineering II
Systems Engineering III
Advanced Operations Research
Advanced Engineering Statistics
Simulation and Optimization
Enterprise Engineering Methods
Enterprise Architectures and Frameworks
Engineering Management I
Engineering Management II
Project Management
Advanced Engineering Economy
Management of Knowledge and Technology

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Industrial Engineering (IE)

5191. ADVANCED STUDIES IN INDUSTRIAL ENGINEERING (1-0). Individually approved research projects and reading courses in industrial engineering. Such individual studies will be graded A, B, C, D, F or X. Subject to the approval of the Graduate Advisor, IE 5191, 5291 and 5391 may be repeated as the topics change. In addition, work on a thesis substitute will be performed under IE 5391. In this case, IE 5391 is graded P/F/R.

5291. ADVANCED STUDIES IN INDUSTRIAL ENGINEERING (2-0). Individually approved research projects and reading courses in industrial engineering. Such individual studies will be graded A, B, C, D, F or X. Subject to the approval of the Graduate Advisor, IE 5191, 5291 and 5391 may be repeated as the topics change. In addition, work on a thesis substitute will be performed under IE 5391. In this case, IE 5391 is graded P/F/R.

5300. TOPICS IN INDUSTRIAL ENGINEERING (3-0). A study of selected topics in industrial engineering. May be repeated when topics vary. Prerequisite: consent of instructor and Graduate Advisor.

5301. ADVANCED OPERATIONS RESEARCH (3-0). A survey of quantitative methods to develop modeling and decision-making skills. Topics include z-transforms and difference equations, Markov Chains, decision analysis techniques, goal programming, game theory, queuing theory and nonlinear programming. Prerequisites: IE 3301 and IE 3315 or equivalent.

5303. QUALITY SYSTEMS (3-0). Principles and practices of industrial quality control. Topics include the Deming philosophy, process improvements, statistical process control, process capability analysis and product acceptance. Prerequisite: IE 3301 or equivalent.

5304. ADVANCED ENGINEERING ECONOMY (3-0). Analysis of capital investments in engineering and technical projects. Topics include decision analysis methods, cash flows, revenue requirements, activity-based analysis, multi-attribute decisions, probabilistic analysis and sensitivity/risk analysis. Prerequisite: graduate standing.

5305. LINEAR PROGRAMMING (3-0). Theory and applications of linear programming including the simplex method, computational complexity, column generation and integer programming. Prerequisite: graduate standing.

5306. DYNAMIC OPTIMIZATION (3-0). Dynamic optimization methods including dynamic programming, the calculus of variations, and optimal control theory. Emphasis is on the modeling and solution of practical problems using these techniques. Prerequisites: IE 3301 and IE 3315, or equivalent.

5307. QUEUEING THEORY (3-0). The fundamentals of queueing theory including Markovian birth-death models, networks of queues, and general arrival and service distributions. Prerequisites: IE 3301 or equivalent.

5309. STOCHASTIC PROCESSES (3-0). The study of probabilistic model building including the fundamentals of both discrete and continuous Markov chains, queueing theory and renewal theory. Prerequisites: IE 3301 or equivalent.

5310. PRODUCTION SYSTEMS DESIGN (3-0). Methods for the design and analysis of manufacturing and logistics systems. Emphasis is placed on reducing cycle time, increasing throughput, lowering variation, and improving both quality and customer responsiveness through modeling techniques. Prerequisites: IE 5301 and IE 5329 or equivalent.

5311. DECISION ANALYSIS (3-0). A survey of methods for making optimal decisions. Topics include decision models, formal logic, fuzzy controls, statistical decision theory, game theory, multiobjective decisions, stochastic programming, information theory and qualitative aspects of the decisions. Prerequisites: IE 5301 or concurrent.

5312. PLANNING AND CONTROL OF ENTERPRISE SYSTEMS (3-0). A continuation of IE 5329 covering enterprise resource planning systems (ERP) and other advanced production control techniques. Computer modeling is emphasized. Prerequisite: IE 5329

5313. RELIABILITY AND ADVANCED QUALITY CONTROL TOPICS (3-0). Includes advanced quantitative topics in reliability design and quality control. Management of reliability and quality control functions are also included. Prerequisites: IE 4308 or IE 5303.

5314. SAFETY ENGINEERING (3-0). Methods to identify, measure, analyze, and evaluate safety hazards in the workplace. Scientific and managerial methods to prevent or control safety hazards. Prerequisite: graduate standing.

5318. ADVANCED ENGINEERING STATISTICS (3-0). An in-depth study of one predictor variable followed by the matrix approach to multiple linear regression. Topics include estimation, prediction, analysis of variance, residual analysis, transformations, multicollinearity, model selection, weighted least squares, ridge regression, robust regression and logistic regression. Prerequisite: IE 3301 or equivalent.

5319. ADVANCED STATISTICAL PROCESS CONTROL AND TIME SERIES ANALYSIS (3-0). Design of control schemes for statistical monitoring and control of modern manufacturing systems. Topics include effect of autocorrelization on SPC charts, time series approaches to controlling autocorrelated data, optimal controllers and recursive estimation. Prerequisite: IE 5303 or equivalent.

5320. ENTERPRISE ENGINEERING METHODS (3-0). A survey of enterprise engineering methods. Topics include system development methodology, discussion of enterprise architectures, activity modeling, business modeling, activity-based performance analysis, simulation, and process improvement. Prerequisite: Graduate standing.

5321. ENTERPRISE ANALYSIS AND DESIGN (3-0). An in-depth study of techniques useful for the analysis and design of the manufacturing enterprise. This course presents an advanced process description technique that is used, with simulation and activity based costing, to facilitate analysis and design. Prerequisites: IE 5320.

5322. SIMULATION AND OPTIMIZATION (3-0). An in-depth study of discrete event simulation theory and practice. Optimization and search techniques used in conjunction with simulation experiments are introduced. A commercial simulation software application is used. Prerequisite: IE 5318 or concurrent.

5326. INDUSTRIAL BIOMECHANICS (3-0). The development and application of biomechanical models of physical work tasks, especially manual materials handling and hard-arm work activities. Prerequisite: IE 4344, 5338 or consent of instructor.

5329. PRODUCTION AND INVENTORY CONTROL SYSTEMS (3-0). The fundamentals of production and inventory control systems. The economic impacts of fluctuating demand, supply availability and production rates are examined. Prerequisite: graduate standing.

5330. AUTOMATION AND ADVANCED MANUFACTURING (2-3). The design of automated and advanced production processes for manufacturing. Topics include numerical control, robotics, group technology, just-in-time, automated inspection and flexible manufacturing systems. Prerequisite: graduate standing.

5331. INDUSTRIAL ERGONOMICS (3-0). The analysis and design of physical work, workplace, and hand tools using ergonomic principles for enhancing performance, health, and safety. Work refers mainly to whole body and hand-arm activities, while workplace refers to industrial and computerized office environments. Applications focus on people's anthropometric, musculoskeletal and psychological characteristics. Prerequisite: IE 4344, 5338 or consent of instructor.

5332. NONLINEAR PROGRAMMING (3-0). Methods for nonlinear optimization including classical theory; gradient methods; sequential unconstrained methods; convex programming; genetic algorithms; simulated annealing; and separable, quadratic, and geometric programming. Prerequisite: graduate standing.

5333. LOGISTICS TRANSPORTATION SYSTEMS DESIGN (3-0). The design and analysis of domestic and international transportation systems of people, processes, and technology. Topics include the role of transportation in the extended enterprise, transportation modeling and optimization techniques, value-added supply chain issues, and financial performance measures. Prerequisites: IE 5301 or concurrent, and 5329 or concurrent, or equivalent.

5334. LOGISTICS DISTRIBUTION SYSTEMS DESIGN (3-0). The design and analysis of distribution systems of people, processes and technology. The focus is on distribution, warehousing and material handling. Topics include the role of the warehouse in the extended enterprise, warehouse planning, process design, layout, equipment selection, workforce and workplace issues, and financial performance

measures. Prerequisites: IE 5301 or concurrent, and 5329 or concurrent, or equivalent.

5335. ADVANCED OCCUPATIONAL ENVIRONMENTAL HYGIENE ENGINEERING (3-0). Interaction of workers with physical environmental agents such as heat, cold, noise, vibration, illumination, radiation, and gravity. The design of work and the workplace to control environmental stresses, and their effects on workers' performance, health and safety. Prerequisite: graduate standing.

5338. HUMAN ENGINEERING (3-0). Human structural, physiological, psychological, and cognitive capacities and limitations in the workplace, and their effects on the design of work systems to enhance productivity, and maintain health and safety. Prerequisite: IE 3301 or equivalent, or consent of instructor.

5339. PRODUCT DESIGN, DEVELOPMENT, PRODUCIBILITY, AND RELIABILITY DESIGN (3-0). This course covers product development and engineering design process with a focus on collaborative design. Software, manufacturing, reliability, testing, logistical and product support considerations are emphasized. Prerequisite: graduate standing.

5342. METRICS AND MEASUREMENT (2-3). Work measurement, methods improvements, and performance measurement. A survey of enterprise and management measurement systems is presented. Prerequisite: IE 3343 or equivalent.

5345. MANAGEMENT OF KNOWLEDGE AND TECHNOLOGY (3-0). Review of contemporary issues in knowledge management, databases, decision support systems, and intelligent systems. Topics include knowledge acquisition, intelligent database design, decision support systems, data mining, knowledge transfer, and collaborative development. Prerequisite: graduate standing.

5346. TECHNOLOGY DEVELOPMENT AND DEPLOYMENT (3-0). Review of management issues in developing and implementing new technologies and methodologies into an organization. Topics include technology forecasting, management of technology based projects, technological competitiveness, technology alliances, and collaboration. Prerequisite: graduate standing.

5350. GRADUATE DESIGN CAPSTONE (3-0). Practicum in Industrial Engineering techniques consisting of professional level experience in a relevant company, agency, or institution. This technical experience is directed by a supervising professor and requires the writing of a professional report. Prerequisite: 24 hours of graduate work in Industrial Engineering.

5351. INTRODUCTION TO SYSTEMS ENGINEERING AND ANALYSIS (3-0). A survey of the basic methods of systems engineering analysis. Topics include general systems theory, probability and statistics, operations research and an overview of the systems engineering process. Prerequisite: graduate standing.

5352. SYSTEMS ENGINEERING I (3-0). A study of systems engineering topics including technical planning and management., requirements definition and validation, and risk management. Semester Project. Prerequisite: Consent of Graduate Advisor.

5353. SYSTEMS ENGINEERING II (3-0). A continuation of IE 5352. Topics include system design and implementation, acquisition, technical management and control, and technical process integration. Semester Project. Prerequisite: IE 5352.

5354. SYSTEMS ENGINEERING III (3-0). A continuation of IE 5353. Topics include system verification, end product validation, transition to use, expanded systems analysis, and enablers. Semester Project. Prerequisite: IE 5353.

5391. ADVANCED STUDIES IN INDUSTRIAL ENGINEERING (3-0). Individually approved research projects and reading courses in industrial engineering. Such individual studies will be graded A, B, C, D, F or X. Subject to the approval of the Graduate Advisor, IE 5191, 5291 and 5391 may be repeated as the topics change. In addition, work on a thesis substitute will be performed under IE 5391. In this case, IE 5391 is graded P/F/R.

5398. THESIS (3-0). Graded P, R.

5698. THESIS (6-0). Graded P, F, R.

6197. RESEARCH IN INDUSTRIAL ENGINEERING (1-0). Supervised research projects directed toward the dissertation. Graded P, R, F.

6297. RESEARCH IN INDUSTRIAL ENGINEERING (2-0). Supervised research projects directed toward the dissertation. Graded P, R, F.

6301. ENTERPRISE ARCHITECTURES AND FRAMEWORKS (3-0). A survey of enterprise architectures and analysis frameworks that have been proposed for the integration of large complex enterprise systems. Emphasis is placed on state-of-the-art approaches. Prerequisite: IE 5320.

6302. FACILITIES PLANNING AND DESIGN (3-0). Facilities planning through layout design. Product flow, space-activity relationships, personnel requirements, and material handling are considered, as well as receiving, shipping, warehousing, and integration with manufacturing. Facilities planning models are explored. Prerequisite: IE 3343, IE 5301, IE 5329 or equivalent.

6303. COMBINATORIAL OPTIMIZATION (3-0). A survey of problems and algorithms in combinational optimization. Topics include shortest paths, minimum-weight spanning trees, matroids, matchings, optimal assignments and set packing. Prerequisite: IE 3315 or equivalent or consent of instructor.

6305. ENGINEERING MANAGEMENT I (3-0). The management of the engineering function in high-technology industry with principal emphasis on the historical development of industrial management principles, decision-making and planning. Prerequisite: graduate standing.

6306. ENGINEERING MANAGEMENT II (3-0). The management of the engineering function in high-technology industry with principal emphasis on human resources and staffing, directing and leading, and controlling. Prerequisite: IE 6305.

6308. DESIGN OF EXPERIMENTS (3-0). Introduction to statistical design and analysis of experiments with applications from engineering, medicine and agriculture. Analysis includes analysis of variance, multiple comparisons and model adequacy. Designs include complete factorial, complete block, incomplete block, Latin square, Youden, two-level fractional factorial and hierachically nested. Prerequisite: IE 5318 or consent of instructor.

6309. RESPONSE SURFACE METHODOLOGY AND COMPUTER EXPERIMENTS (3-0). Empirical model building and process optimization using experimental design and statistical modeling. The first half of the course covers first and second order models and designs, multiresponse experiments and mixture experiments. The second half introduces designs based on Latin hypercubes, orghogonal arrays, and number-based theoretic methods, plus models using kriging, multivariate adaptive regression splines and neural networks. Prerequisite: IE 6308.

6310. INDUSTRIAL ROBOT APPLICATIONS (2-3). A study of the requirements and selection criteria for the integration of robots into simple and complex industrial activities. Prerequisite: Graduate standing.

6397. RESEARCH IN INDUSTRIAL ENGINEERING (3-0). Supervised research projects directed toward the dissertation. Graded P, R, F.

6399. DISSERTATION (3-0). Graded P, R.

6697. RESEARCH IN INDUSTRIAL ENGINEERING (6-0). Supervised research projects directed toward the dissertation. Graded P, R, F.

6699. DISSERTATION (6-0). Graded P, R.

6997. RESEARCH IN INDUSTRIAL ENGINEERING (9-0). Supervised research projects directed toward the dissertation. Graded P, R, F.

6999. DISSERTATION (9-0). Graded P, F, R.

Objective

The graduate program provides opportunities for professional development in such forms as: instructional courses to enhance technical competence in areas of mechanical engineering practice; training through a variety of experiences in design, development, research, experimentation, and/or analysis in joint efforts with faculty and peers; specialized courses of study required for entry into career fields allied to the mechanical engineering discipline; guided individual study under faculty supervision; and supportive coursework for programs leading to careers that require interdisciplinary competence.

A student with aid from a faculty advisor plans a program that will be consistent with his or her technical interests and the available facilities and course offerings. Typically, programs are classified as:

1. Thermal Science
2. Fluid Science
3. Mechanical Design and Manufacturing
4. Solid Mechanics and Structures
5. Controls and Systems

Admission Requirements

Admission Criteria

Admission to the graduate program in ME is based on equal weighting of the following six criteria:

1. An overall GPA, as calculated by the Graduate School, of 3.0 or higher in undergraduate coursework.
2. Relevance of the student's previous degrees to the ME curriculum.
3. Reputation of the universities or colleges the student has attended.
4. A GRE score of at least 400 (verbal) and 650 (quantitative) for M.S. applicants, and at least 500 (verbal) and 750 (quantitative) for Ph.D. applicants.
5. Three satisfactory written recommendation forms from prior professors or supervisors.
6. A written essay on the student's goals and reasons for pursuing graduate studies.

Admission Status

- Unconditional Admission: Applicants who show by meeting all of the above criteria that they are fully prepared to start immediately on their selected graduate program of interest will be admitted unconditionally.
- Probationary Admission: Applicants who fail to meet the conditions for unconditional admission, but satisfy at least four of the six criteria listed above, will be considered for probationary admission. The graduate advisor normally identifies areas of deficiency that must be removed by successfully completing assigned remedial courses before the admission status is changed to unconditional.
- Provisionary Admission: Applicants who are unable to supply all of the required documentation prior to the admission deadline, but who otherwise appear to meet the admission criteria, may be granted provisional admission.
- Denial: Applicants who fail to meet at least four of the six admission criteria will normally be denied admission.
- Deferral: A deferred decision may be granted when an application file is incomplete or when a denied decision is not appropriate.

Program in Mechanical Engineering

www-mae.uta.edu

Area of Study and Degrees

Mechanical Engineering
M.S., M.Engr., Ph.D.

Master's Degree Plans

Thesis (M.S.) and Non-Thesis (M.Engr.)

Director

J. Craig Dutton
211B Woolf Hall
817.272.2603

Graduate Advisor

Roger D. Goolsby
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Graduate Faculty

Professors

Agonafer, Aswath, Chan, Goolsby, Haji-Sheikh, Hullender, Lawrence, Lu, Nomura, Wang, Wilson, Woods, You

Associate Professors

Luo, Shiakolas, Tong

Assistant Professors

Han, Liu, Moon

President Emeritus and Professor Emeritus

Woolf

Professors Emeritus

Barker, Lawley

Senior Lecturers

Han, Kumar, Michael, Wimberly

Admission Requirements for B.S. to Ph.D. Track

1. An overall GPA, as calculated by the Graduate School, of 3.0 or higher in undergraduate coursework.
2. Relevance of the student's previous degrees to the ME curriculum.
3. Reputation of the universities or colleges the student has attended.
4. A GRE score of at least 500 (verbal) and 750 (quantitative).
5. Three satisfactory written recommendation forms from prior professors or supervisors.
6. A written essay on the student's goals and reasons for pursuing graduate studies.

Waiver of the Graduate Record Exam

A waiver of the Graduate Record Examination may be considered for a UT Arlington graduate who has completed a BSME degree within the past 3 years. The student's GPA must equal or exceed 3.0 in each of two calculations: (a) in the last 60 hours of study and (b) in all undergraduate coursework completed at UT Arlington. The GRE waiver may be extended to include non-UT Arlington candidates that have undergraduate degrees in mechanical engineering (with GPA of 3.25 or above) from U.S. universities with an ABET accredited engineering program or other select U.S. universities subject to graduate advisor's approval. The waiver of the GRE applies only to applicants for the master's degree programs. Interested applicants should contact the Mechanical Engineering Graduate Advisor.

Criteria for Award of Fellowships and Assistantships

Applicants who demonstrate skills, experience or interests that meet the needs of the ME Graduate Program will be considered for fellowships or assistantships.

Fast Track Program for Master's Degree in Mechanical Engineering

The Fast Track Program enables outstanding UT Arlington senior undergraduate students in Mechanical Engineering to satisfy degree requirements leading to a master's degree in Mechanical Engineering while completing their undergraduate studies. When senior-level students are within 15 hours of completing their undergraduate degree requirements, they may take up to 9 hours of graduate level coursework designated by the Mechanical Engineering Program to satisfy both undergraduate and graduate degree requirements. In the limiting case, a student completing the maximum allowable hours (9) while in undergraduate status would have to take only 21 additional hours to meet minimum requirements for graduation in a 30 hour thesis master's degree program (M.S.) or 27 additional hours for a non-thesis master's degree program (M. Engr.)

Interested UT Arlington undergraduate Mechanical Engineering students should apply to the Mechanical Engineering Program when they are within 30 hours of completing their bachelor's degrees. They must have completed at least 30 hours at UT Arlington, achieving a GPA of at least 3.0 in those courses, and have an overall GPA of 3.0 or better in all college courses. Additionally, they must have completed at least 11 hours of specified undergraduate foundation courses with a minimum GPA of 3.3 in those courses. Fast Track Program details are provided in the UT Arlington Undergraduate Catalog. Contact the Undergraduate Advisor or Graduate Advisor in Mechanical Engineering for more information about the program.

Continuation

The Mechanical Engineering Graduate Program, in fulfillment of its responsibility to graduate highly qualified professional engineers, has established certain policies and procedures. In addition to the requirements of the Graduate School listed elsewhere, to continue in the program each mechanical engineering graduate student must:

1. Maintain at least a B (3.0) overall GPA in all coursework, and
2. Demonstrate suitability for professional engineering practice.

At such time as questions are raised by mechanical engineering graduate faculty regarding either of the above, the student will be notified and will be provided the opportunity to respond to the Committee on Graduate Studies in Mechanical Engineering. The Committee on Graduate Studies will review the student's performance and make a recommendation concerning the student's eligibility to continue in the program. Appeal of a decision on continuation may be made through normal procedures outlined in the section of this catalog entitled "Grievances Other than Grades."

Degree Requirements

Core Courses

Thermal Science: ME 5316 Thermal Conduction, ME 5317 Convection Heat Transfer, ME 5318 Radiative Heat Transfer, ME 5321 Advanced Classical Thermodynamics

Fluid Science: ME 5313 Fluid Dynamics, ME 5342 Advanced Gas Dynamics I, ME 5344 Viscous Flows

Design, Mechanics and Manufacturing: ME 5310 Finite Element Methods, ME 5337 Introduction to Robotics, ME 5339 Structural Aspects of Design

Controls and Systems: ME 5303 Classical Methods of Control Systems Analysis and Synthesis, ME 5305 Dynamic Systems Modeling, ME 5341 Control Systems Components.

Analysis Courses

ME 5331, ME 5332, approved mathematics courses.

Master of Science in Mechanical Engineering

The Master of Science degree is a research-oriented program in which completion of a thesis is mandatory. A minimum of 30 credit hours is required as follows: three core courses (one course each in three of the four areas) and the two analysis courses listed above; three graduate courses (nine credit hours) related to a specialty in mechanical engineering; and six credit hours of thesis. The student must enroll in ME 5398 or ME 6397 every semester in which the student is actively involved in thesis preparation or research, except that the student must enroll in ME 5698 in the semester of graduation.

Master of Engineering in Mechanical Engineering

The Master of Engineering degree is an engineering practice-oriented program. A minimum of 36 credit hours is required as follows: four core courses (one in each area) and the two analysis courses listed above; six courses (18 credit hours) of elective graduate courses in engineering, mathematics, and/or science relating to the student's interest areas. The elective courses may include as many as three hours of special project courses (ME 5391).

Manufacturing Engineering Option

Students desiring a program in manufacturing engineering may achieve this goal while meeting the requirements for a graduate degree in mechanical engineering. This is accomplished by selecting a specific program of courses. Upon completion, the student receives a Manufacturing Engineer's Certificate along with the M.S.M.E. or M.Engr. M.E. Specifics are available in the Mechanical Engineering office.

B.S. to Ph.D. Track

In addition to the requirements listed below for the Ph.D. degree, a B.S.-Ph.D. Track student will be required to enroll in at least three hours of research each semester during the student's first two years, receiving a pass/fail grade (no R grade) in these hours. A B.S.-Ph.D. student must have a faculty research (dissertation) advisor prior to the start of the student's second full semester. A B.S.-Ph.D. student must take the Ph.D. diagnostic examinations prior to the start of the student's third full semester.

Doctor of Philosophy

The Ph.D. degree should normally require four years of full-time study after completion of the BS degree. There is no foreign language requirement for the Ph.D. degree.

To meet the educational goal of a broad-based technical background in mechanical engineering, it is expected that each student will take sufficient graduate coursework to obtain in-depth knowledge in at least two areas of mechanical engineering. Consequently, the Department expects all Ph.D. candidates to complete at least the following minimum requirements beyond the B.S. degree:

- Three core courses (nine credit hours) listed for the M.S. and M.E. degrees.
- One additional course (three credit hours) at the graduate level in one of the broad areas of mechanical engineering outside the student's major area of specialization. Core courses are also acceptable for meeting this requirement.
- Eight additional courses (24 credit hours) in the student's major area of interest. A Master's thesis can be used to substitute for six (6) credit hours.
- Two courses (six credit hours) of engineering analysis (ME 5331, 5332, or other approved mathematics courses).
- Two courses (six credit hours) of mathematics, numerical analysis, computer science, or statistics, outside of mechanical engineering.
- Two courses (six credit hours) in science and/or engineering outside of mechanical engineering.
- Nine credit hours (ME 6999) for Dissertation.

Final course requirements are determined by the student's supervising committee. In addition, a student must pass three examinations before being awarded the Ph.D. degree: the Diagnostic Exam, the Comprehensive Exam, and the Final Exam (or Dissertation Examination).

A Diagnostic Examination will be administered to the student within the first two semesters after a Master's degree or before the accumulation of 42 semester hours of graduate work beyond the baccalaureate degree. The Diagnostic Exam is a written test of the student's capability to pursue successfully the doctorate degree, and it aids in developing the program of study for the student. The Diagnostic Examination tests fundamental knowledge in two technical areas of mechanical engineering. The student and the student's research advisor jointly choose the technical areas from the following five: (1) thermal science, (2) fluid science, (3) mechanical design and manufacturing, and (4) solid mechanics and structures, and (5) controls and systems. The exam topics for the technical areas are given in the ME Ph.D. Diagnostic Exam handout. A comprehensive examination will be administered to the student after the successful completion of all phases of the diagnostic examination and before the student's research work for the dissertation. The comprehensive examination is used to determine if the student has the necessary background and specialization required for the dissertation research and if the student can organize and conduct the research. An applicant must pass this examination to be admitted to candidacy for the Ph.D. degree.

The student must enroll in at least three hours of dissertation courses (ME 6399-6999) or research courses (ME 6397-6999) every semester in which the student is actively involved in dissertation preparation or research, except that the student must enroll in ME 6999 in the semester of graduation.

The student must submit the Application for Candidacy and Final Program of Work to the Mechanical Engineering Committee on Graduate Studies immediately after completion of the Comprehensive Examination. Coursework taken for the Master's degree at this institution may be used to meet these requirements; however, courses listed for the Master's degree or any other degree cannot be listed as the actual course requirement on the Final Program of Work. Transfer work is not accepted in doctoral programs; however, such courses may provide a basis for waiving some course requirements.

The Final Examination (or Dissertation Examination) is an oral presentation of the dissertation in the form of a seminar before the student's Committee and is open to the members of the University community. Approval of the dissertation by the members of the Dissertation Committee is required.

Please see the section entitled General Graduate School Regulations and Information in this Catalog for further details.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Mechanical Engineering (ME)

5191. ADVANCED STUDIES IN MECHANICAL ENGINEERING (1-0). May be repeated for credit as topics change. Project work performed under a non-thesis degree will normally be accomplished under this course number, with prior approval of the Committee on Graduate Studies.

5291. ADVANCED STUDIES IN MECHANICAL ENGINEERING (2-0). May be repeated for credit as topics change. Work performed as a thesis substitute will normally be accomplished under this course number, with prior approval of the Committee on Graduate Studies.

5303. CLASSICAL METHODS OF CONTROL SYSTEMS ANALYSIS AND SYNTHESIS (3-0). Intended to equip the student with detailed familiarity with historically significant tools of the control engineer. Detailed discussion of block diagram algebra, the root locus, the Bode diagram, and state variable methods for simulation and control system design are presented.

5305. DYNAMIC SYSTEMS MODELING (3-0). To equip the student with the capability of determining the necessary equations to model a system of mixed physical types in an orderly, logical fashion. Lumped and distributed parameter modeling techniques formulated for computer simulation of mechanical, fluid, and thermal systems are presented.

5306. FLUID POWER CONTROL (3-0). Mathematical models for hydraulic and pneumatic control components and systems including hydraulic pumps, motors, and spool valves. The application of electrohydraulic and hydromechanical servomechanisms for position and velocity control are treated. Theory supported by laboratory demonstrations and experiments.

5310. FINITE ELEMENT METHODS (3-0). Finite element method in the study of the static response of complex structures and of continua; applications to field problems; analytical methods emphasized, and digital computer application undertaken. Also offered as AE 5330.

5311. STRUCTURAL DYNAMICS (3-0). Natural frequencies; forced and random response of complex structural systems studied through the use of the finite element method; computational aspects of these problems discussed, and digital computer applications undertaken. Also offered as AE 5331.

5312. CONTINUUM MECHANICS (3-0). Study of the underlying physical and mathematical principles relating to the behavior of continuous media; interrelationships between fluid and solid mechanics.

5313. FLUID DYNAMICS (3-0). Basic conservation laws, flow kinematics, special forms of the governing equations, two-dimensional potential flows, surface waves and some exact solutions of viscous incompressible flows. Offered as AE 5313 and ME 5313.

5314. FRACTURE MECHANICS IN STRUCTURAL DESIGN (3-0). Linear elastic fracture mechanics, general yielding fracture mechanics, damage tolerance and durability design, fail safe and safe life design criteria, analysis of fatigue crack growth, residual strength analysis.

5316. THERMAL CONDUCTION (3-0). Fundamental laws, initial and boundary conditions, basic equations for isotropic and anisotropic media, related physical problems and steady and transient temperature distributions in solid structures.

5317. CONVECTION HEAT TRANSFER (3-0). Equations of motion of viscous fluids are reviewed and the energy equations are introduced. Exact and approximate solutions are made for forced convective problems with non-isothermal and unsteady boundaries. Free convection and combined free- and forced-convection problems are solved.

5318. RADIATIVE HEAT TRANSFER (3-0). General equations of radiative transfer derived and solved for special problems, and the elements of atomic, molecular, and continuum radiation are introduced.

5319. ADVANCED FINITE ELEMENT METHODS (3-0). Continuation of ME 5310. Modeling of large systems, composite and incompressible materials, substructuring, mesh generation, solids applications, nonlinear problems. Also offered as AE 5319. Prerequisite: ME 5310 or equivalent.

5321. ADVANCED CLASSICAL THERMODYNAMICS (3-0). Fundamentals of thermodynamics reviewed. Different treatments of principles studied, compared and formal relationships developed and applied to chemical, magnetic, electric and elastic systems.

5322. ADVANCED STRUCTURAL DYNAMICS (3-0). Normal mode method for undamped and proportionally damped systems, component mode synthesis, generally damped systems, complex modes, effect of design modification on system response. Prerequisite: ME 5311 or equivalent.

5325. COMBUSTION (3-0). Fundamental treatment of problems involving simultaneous occurrence of chemical reaction and transfer of heat, mass and momentum. Topics include kinetically controlled combustion phenomena; diffusion flames in liquid fuel combustion; combustion of solids; combustion of gaseous fuel jets; flames in premixed gases.

5331. ANALYTIC METHODS ENGINEERING (3-0). Introduction to advanced analytic methods in engineering. Methods include multivariable calculus and field theory, Fourier series, Fourier and Laplace Transforms. Offered as ME 5331 and AE 5351. Prerequisite: Undergraduate degree in engineering, physics, or mathematics.

5332. ENGINEERING ANALYSIS (3-0). Introduction to partial differential equations and complex variable theory with application to modeling of physical systems. Also offered as AE 5352.

5336. KALMAN FILTERING (3-0). Kalman filter design and implementation. Optimal filtering for discrete-time and continuous-time dynamical systems with noise. Wiener filtering. State-space determination. Prerequisite: permission of instructor. Also offered as AE 5336 and EE 5322: credit will be granted only once.

5337. INTRODUCTION TO ROBOTICS (2-1). An overview of industrial robots. Coordinate systems and homogeneous transformations, kinematics of manipulators; motion characteristics and trajectories; dynamics and control of manipulators. Demonstration of robot programming using an industrial robot.

5339. STRUCTURAL ASPECTS OF DESIGN (3-0). Emphasis on determination of stresses and prediction of failure in machine and structural components; stress-strain relations in elastic and plastic regions; static failure and failure criteria; residual stress and strain due to yielding; contact stress; notched sensitivity; strain-fatigue life relationship; characteristics of cracks in structural components; creep and creep rupture. Also offered as AE 5340. Credit will be granted only once.

5340. AUTOMOTIVE ENGINEERING (2-2). Analysis and design of automotive systems including power train, suspension, frame and chassis, braking systems, and control systems. Emphasis on racing applications and performance. Lectures are augmented with hands-on experience.

5341. CONTROL SYSTEM COMPONENTS (2-3). The components and hardware used in electronic, hydraulic, and pneumatic control systems; techniques of amplification, computation, compensation, actuation, and sensing; modeling of multiport systems as well as servo systems analysis. Prerequisite: MAE 4310 OR ME 5303.

5342. GASDYNAMICS (3-0). Review of fundamental compressible flow theory, method of characteristics for perfect gases, the Rankine-Hugoniot conditions, linearized flow theory. Also offered as ME 5342. Credit will be granted only once.

5343. TWO-PHASE FLOW AND BOILING HEAT TRANSFER (3-0). This is to introduce significant progress in phase change heat transfer and two-phase flow. Boiling heat transfer will be followed by

the study of pressure drop and heat transfer in the pipes of two-phase flow. Boiling heat transfer includes pool boiling, forced convection boiling, and critical heat flux. Also selected topics by the instructor (heat pipe, condensation, Helmholtz wave instability, etc.)

5344. VISCOUS FLOWS (3-0). Navier-Stokes equations and Prandtl's boundary layer approximations; laminar and turbulent boundary layers including internal and external flows.

5345. NUMERICAL HEAT TRANSFER (3-0). Discussion of numerical methods for conduction and convection heat transfer problems includes introduction to various computational techniques suitable for digital computers. Finite difference method is emphasized.

5346. COOLING OF ELECTRONIC PACKAGES (3-0). This course deals with the development and application of analytical models of thermal phenomena occurring in electronic equipment. The calculation of heat loads and temperature fields using different cooling techniques. Includes parameter evaluation and design studies.

5347. HEAT EXCHANGER DESIGN (3-0). Design procedures, system evaluations and design parameters in heat exchangers. Heat exchanger configurations; student design projects.

5348. FUNDAMENTALS OF COMPOSITES (3-0). Fundamental relationships between the mechanical behavior and the composition of multiphase media; failure criteria discussed. Offered as AE 5315, ME 5348, and MSE 5348. Credit will be granted only once.

5349. ADVANCED COMPOSITES (3-0). Review of current state-of-the-art applications of composites; structural properties; structure analysis; damage characterization and failure mechanism; notched sensitivity; delamination; fatigue characteristics; composite material testing; characteristics of composite joints. Also offered as MSE 5349 and AE 5325. Prerequisite: ME 5348, MSE 5348, or AE 5315, or consent of instructor.

5351. PRINCIPLES OF SOUND AND VIBRATION CONTROL (3-0). Fundamental principles of sound and vibration control will be developed. The coupling of mechanical vibrations to unwanted acoustic radiation will be examined using time domain analysis, frequency domain (spectral) analysis and correlation techniques. Standard control methods, including active vibration suppression, will be covered.

5352. FUNDAMENTALS IN ELECTRONIC PACKAGING (3-0). An introductory treatment of electronic packaging, from single chip to multichip, including materials, electrical design, thermal design, mechanical design, package modeling and simulation, processing considerations, reliability, and testing.

5353. APPLICATION OF COMPUTATIONAL TECHNIQUES TO ELECTRONIC PACKAGING (3-0). This course will develop the student's capability to characterize the heat performance of electronic cooling devices by using "Commercial Computational Heat Transfer Codes (IDEAS ESC, Icepack, Flotherm, CFDAce, ...)." In addition, the use of MacroFlow, a network based model, for system-level thermal design for electronics cooling will be presented. A number of industry-related problems ranging from first-level packages through system-level packages would be analyzed. At the end of the class, a student is expected to formulate and model complex industry-based problems using the commercial CFD codes. There will be frequent industry speakers on specific projects being studied in the class.

5354. FAILURES AND THEIR PREVENTION IN ELECTRONIC PACKAGES (3-0). A comprehensive overview of the fundamental causes for failures in electronic assemblies which include the printed wiring board, package, and second-level assemblies. Failure detection techniques and methodologies, key failure analysis techniques used will be discussed.

5355. MECHANICAL FAILURE OF ELECTRONIC PACKAGES (3-0). Failure analysis, fatigue of electronic packages, fracture and creep behavior of solders. Mechanical properties of substrate materials. Electromigration and failure mechanisms.

5356. CHIPSCALE PACKAGING (3-0). Overview of area array packaging with special emphasis on the maturing chipscale packaging technology. Topics covered will include the design concepts of this technology, the materials related aspects, the manufacturing processes, and their reliability in a variety of applications.

5360. MULTIDISCIPLINARY INVERSE DESIGN AND OPTIMIZATION (3-0). For a new design of any realistic device to be competitive, it must satisfy a number of often conflicting requirements, objectives, and constraints. This course offers a variety of basic concepts and methodologies for inverse design and optimization with practical applications in fluid mechanics, heat transfer, elasticity, and electromagnetism. Offered as AE 5360 and ME 5360. Credit will be granted only once.

5361. MULTIDISCIPLINARY COMPUTATIONS (3-0). Concurrent engineering analysis involving fluid flow, heat transfer, elasticity, and electromagnetism; design optimization methods for multidisciplinary problems; examples of practical applications. Also offered as ME 5361. Credit will be granted only once. Prerequisite: Reasonable programming skills in FORTRAN or C (C++). Consent of the instructor.

5363. INTRODUCTION TO ROTORCRAFT ANALYSIS (3-0). History of rotorcraft. Behavior of the rotor blade in hover and forward flight. Rotor configurations, dynamic coupling with the fuselage, elastic and aeroelastic effects. Also offered as ME 5363. Credit will be granted only once.

5364. INTRODUCTION TO AERODYNAMICS OF ROTORCRAFT (3-0). Practical aerodynamics of rotors and other components of rotorcraft. Introduction to performance, handling qualities, and general flight mechanics related to rotorcraft design, test, and certification requirements. Emphasis is on real rotorcraft mission capabilities as defined by the customer. Offered as AE/ME 5364. Credit will be granted only once.

5365. INTRODUCTION TO HELICOPTER AND TILTROTOR SIMULATION (3-0). Dynamic and aerodynamic modeling of rotorcraft elements using vector mechanics, linear algebra, calculus and numerical methods. Special emphasis on rotors, aerodynamic interference, proper axis system representation, model assembly methods and trimming. Offered as AE 5365 and ME 5365. Credit will be granted only once.

5371. DESIGN OF DIGITAL CONTROL SYSTEMS (3-0). Sampling and Data reconstruction. Z-transforms and state variable descriptions of discrete time systems. Linear quadratic optimal control and state estimation. Quantization and other non-linearities. Computer simulations and/or laboratory implementation of real time control systems. Analysis of system behavior using discrete time model and evaluation of the system performance. Discrete controller design techniques such as root locus, frequency response and state space techniques. Evaluate and test the system performance using digital simulations. (Also offered as AE 5371).

5374. TOPICS IN NONLINEAR SYSTEMS ANALYSIS AND CONTROLS (3-0). Nonlinear systems; phase plane analysis; Poincare-Bendixon theorems; nonlinear system stability; limit cycles and oscillations; center manifold theorem, Lyapunov methods in control; variable structure control; feedback linearization; backstepping techniques. Also offered as AE 5337. Credit will be granted only once.

5380. DESIGN OF DIGITAL CONTROL SYSTEMS (3-0). Sampling and data reconstruction. Z-transforms and state variable de-

scriptions of discrete-time systems. Linear quadratic optimal control and state estimation. Quantization and other nonlinearities. Computer simulations and/or laboratory implementation of real-time control systems. Digital feedback control systems. Construction of discrete-time mathematical model system performance. Discrete controller design techniques such as root locus, frequency response, and state space techniques. Evaluate and test the system performance using digital simulations. Also offered as AE 5380. Prerequisite: undergraduate level introduction to automatic control course.

5381. BOUNDARY LAYERS (3-0). An introductory course on boundary layers. The coverage emphasizes the physical understanding and the mathematical foundations of boundary layers, including applications. Topics covered include laminar and turbulent incompressible and compressible boundary layers, and an introduction to boundary layer transition.

5390. SPECIAL TOPICS IN MECHANICAL ENGINEERING (3-0). Seminar to provide formal instruction in special topics pertinent from semester to semester depending on the availability of faculty. May be repeated provided topics differ.

5391. ADVANCED STUDIES IN MECHANICAL ENGINEERING (3-0). May be repeated for credit as topics change. Project work performed under a non-thesis degree will normally be accomplished under this course number, with prior approval of the Committee on Graduate Studies.

5398. THESIS (3-0).

5698. THESIS (6-0).

5998. THESIS (9-0).

6196. MECHANICAL ENGINEERING INTERNSHIP (1-0). For students participating in internship programs. May be repeated for credit. Requires approval of Graduate Advisor.

6197. RESEARCH IN MECHANICAL ENGINEERING (1-0). May be repeated for credit.

6297. RESEARCH IN MECHANICAL ENGINEERING (2-0). May be repeated for credit.

6316. ADVANCED ROBOTICS (3-0). Advanced design concepts such as application of optimization technique and analytical approaches such as 3-D homogeneous matrix method will be introduced. Structural dynamics and control strategy for both rigid and flexible manipulators will be studied.

6337. COMPUTER AIDED DESIGN (3-0). Role of graphics; image representation, batch and interactive computing, methods of automated mathematical model generation, mainframe and microcomputing in engineering design. Application in mechanical, structural, thermal, controls areas of mechanical engineering.

6344. HEAT TRANSFER IN TURBULENT FLOW (3-0). Introduction to heat transfer in turbulent boundary layers including internal and external flows, turbulence structure, the Reynolds analogy, van Driest hypothesis, high and low Prandlt number two equation model, effects of surface roughness on heat transfer.

6397. RESEARCH IN MECHANICAL ENGINEERING (3-0). May be repeated for credit.

6399. DISSERTATION (3-0).

6697. RESEARCH IN MECHANICAL ENGINEERING (6-0). May be repeated for credit.

6699. DISSERTATION (6-0).

6997. RESEARCH IN MECHANICAL ENGINEERING (9-0). May be repeated for credit.

6999. DISSERTATION (9-0).

The College of Liberal Arts

Dean: Beth S. Wright, Ph.D.
210 University Hall • Box 19617 • 817.272.3291 • www.uta.edu/libarts

Mission and Philosophy

The mission of the College of Liberal Arts is to provide a learning community wherein students are provided both broad-based and specialized education and to vitalize the educational process by creating and transmitting knowledge through research, scholarship and creative activity.

The college is characterized by a diversity of intellectual styles and interests. Departments and programs cluster into social sciences, humanities and fine arts. Liberal Arts disciplines address the rich meanings of human experience and expression and liberate the imagination by producing knowledge and creating beauty.

The faculty and administration of the college address the traditional objectives of liberal arts in the University: 1) to develop the tools for analysis, appreciation and communication; for written and oral expression; for comprehension, interpretation, and analysis of textual material; for analytic reasoning and scientific method; and for appreciation of aesthetic experience; 2) to prepare students for a range of careers in academia and public and private sector organizations. Graduates of the college contribute to the region, the state and the nation as college and university professors, elementary and secondary teachers, legal professionals, in government agencies, social services, international business and industry, media and advertising, health and recreation, and cultural and entertainment industries; and 3) to promote understanding and critical evaluation of the cultural milieu the attitudes and the ideas that shape institutions and strategies in societies.

Accomplishing these objectives culminates in students reaping the creative, utilitarian and life enriching benefits of a liberal arts education.

History and Overview

The University of Texas at Arlington's College of Liberal Arts acquired its first graduate degrees in 1968, with the establishment of M.A. programs in English and History. Since that time, the number of M.A. programs offered has expanded to 13. In 1974, the college established its first Ph.D. level program, Humanities. The Humanities Program was reorganized in 1997 and replaced by three new Ph.D. level programs in English (Literature and Rhetoric/Composition tracks), History (transatlantic) and Linguistics. A joint Ph.D. in Philosophy with the University of North Texas was approved in 2005.

Scholastic Activity and Research Interests of the Faculty

The faculty in the College of Liberal Arts excel in their roles as educators, creative scholars and researchers. Eight faculty members have won the Academy of Distinguished Teachers Award, and eight faculty are Chancellor's Teaching Award recipients. Two of our faculty have won the prestigious Piper Award from the UT System. Several faculty from a variety of departments in the college also have won the University Research Achievement Award. Numerous faculty have received recognition for their published scholarship, including Pulitzer Prize nominations and the Choice magazine Outstanding Academic Book Award. The Jenkins and Virginia Garrett Endowed Chair in Greater Southwestern Studies and the History of Cartography was created in 1995 and is currently held by David Buisseret, Ph.D. Five faculty from the College of Liberal Arts have been selected to be members of the Academy of Distinguished Scholars.

The scholarly activities and research of the faculty cover a range of areas represented within the 13 disciplines in the college. History faculty research interests center on transatlantic broadly defined, and research specializations of faculty include southern, western and southwestern history, frontier development, women and gender, urban and labor and public history. English faculty research strengths lie in the areas of American, British and comparative literatures; and rhetoric, composition and criticism. Linguistics faculty specialize in field linguistics. Numerous faculty throughout the college also conduct research on gender and women's issues. Anthropology faculty members recently became the first foreign archaeological team to excavate in Albania in more than 50 years.

Special Programs and Opportunities

The College of Liberal Arts provides a number of special programs and opportunities for graduate students. College lecture series and seminars, conferences, publications, academic centers, library collections and an art gallery provide a mosaic of events and resources that enrich the university community.

Lecture Series, Seminars and Conferences

- Each year the English Department sponsors the Hermann Lecture series, which brings scholars from UT Arlington and other universities together for discussions and master classes on an issue of general theoretical interest.
- The History Department presents the Walter Prescott Webb Memorial Lectures each March. Nationally prominent speakers make presentations on an annual topic, followed by a dinner in the University Center and a keynote address.
- Graduate students in Linguistics sponsor a Linguistics Conference each year. This conference provides an opportunity for students to begin their professional careers by organizing the sessions, reviewing paper abstracts and presenting their own research.
- The Women's Studies Program organizes an annual, month-long Women's History Month Lecture Series. Exhibits and film/video presentations also are included as part of the events scheduled during the month of April. The Women's Studies Brown Bag Colloquium is another forum for scholars, primarily UT Arlington faculty, to share their research with the University community.

- The Criminal Justice and Criminology Program sponsors a Brown Bag Lecture Series every spring semester, and students have the opportunity to receive credit for practicums.
- The Philosophy Lecture Series is sponsored by the Department of Philosophy and Humanities, together with the Philosophy Club at UT Arlington. Each semester, a philosopher of national or international reputation from another university is invited to the UT Arlington campus to lecture on a topic of current philosophical interest.
- The Department of Political Science hosts the annual Haggard Lectures, bringing in nationally and internationally known scholars in the field.
- Each spring the Department of Sociology and Anthropology hosts the annual Termini Lecture Series in Anthropology, which brings a nationally prominent anthropologist to campus to speak on topics of general interest. The speaker typically presents a public lecture and a more informal presentation, primarily for the benefit of students, on a related topic.
- The Department of History hosts an annual student conference for the graduate students.

Publications

- The History Department publishes an annual volume comprised of Webb Lecture Series papers.
- The English Department houses the online literary review "Znine" and the online journal "Pretext."
- The Center for Theory houses the online journal "Fast Capitalism."
- Individual departments/programs publish newsletters which provide news and information about and for students, faculty and alumni.

Centers

The College of Liberal Arts houses numerous centers designed to promote scholarship, research and teaching. These centers organize conferences, lecture series and workshops and provide a conduit for making faculty expertise available to the community. College of Liberal Arts centers are listed below and described in the Facilities for Advanced Studies and Research section of this catalog.

The Center for Criminal Justice Research and Training
The Center for Greater Southwestern Studies and the History of Cartography
The Center for Mexican American Studies
The Center for Post-Soviet and East European Studies
The Center for Social Research
The Center for Theory
The English Language Institute
The International Linguistics Center
The Language Acquisition Center
The Women and Minorities Research and Resource Center

Other Resources

- In support of the history M.A. and Ph.D. programs, the UT Arlington Library Special Collections houses the Jenkins Garrett Library of Texana and Mexican War historical material and the Cartographic History Library. In addition, Special Collections has material on UT Arlington's history since 1895, the history of organized labor in Texas and the Southwest, and Yucatan and Honduran archival materials.
- The Gallery at UT Arlington presents a full program of major exhibitions in its 4,000-square-foot gallery, including lectures, symposia, screenings and publications. The Gallery's program demonstrates the complementary roles of visual and verbal literacy.
- The Department of Modern Languages has a Language Laboratory which produces innovative software in language learning.
- The Department of Music offers laboratory facilities and the Fine Arts Library contains an extensive collection of recordings and publications relating to musical performance and theory.
- The Anthropology Program has a biological anthropology lab, and offers an archaeological field school every summer where students can gain academic credit for learning and applying archaeological field methods.
- Numerous student organizations exist on campus to provide students with the opportunity to interact with peers in their disciplines. These student groups include interdisciplinary organizations for graduate students interested in Medieval Studies and Rhetoric; and honor societies for Anthropology, Communication, Criminal Justice, English, History, Political Science, and Sociology, as well as specialized interest groups.
- Student awards, scholarships and teaching and research assistantships are available in many College of Liberal Arts departments and programs. Each spring the History Department awards an outstanding graduate student the Wolfskill Prize, a cash award and plaque representing superior attainment in history studies. The English Language Institute, a part of the Program in Linguistics, provides graduate teaching assistantships. A McNair Fellowship is sponsored by the Office of the Dean.
- The Dean of College also awards funds for research travel and for travel to conferences for presentation of original research.

Programs

The College of Liberal Arts offers the following graduate degree programs:

Anthropology, M.A.
Communication, M.A.
Criminology and Criminal Justice, M.A.
English, M.A., Ph.D.
History, M.A.; Transatlantic History, Ph.D.
Humanities, M.A.
Linguistics, M.A., Ph.D.; TESOL, M.A.
Modern Languages (French and Spanish), M.A.
Music Education, M.M.
Philosophy, joint Ph.D. with UNT.
Political Science, M.A.; Public Administration, M.PA.
Sociology, M.A.

Master of Fine Arts

The M.F.A. is a professional degree in the practice of art. The program of study proposed here is designed to guide and encourage students in the development of their skills, the definition of their goals and the recognition of their responsibilities, as artists. The educational objective is to provide training that will make it possible for each student in the program to achieve professional excellence. The Graduate experience places an emphasis on theory, research and critical thinking, and an awareness of the function of art and design in the world today. The M.F.A. degree is unique in that it is the artist's terminal degree. The UT Arlington M.F.A. requires the CAA suggested 60 credit hours and a two to three year commitment.

The M.F.A. program will provide a demanding educational environment appropriate for strongly motivated students. Artists and designers will be chosen for the program on the basis of work that demonstrates artistic individuality and promise.

The many resources of UT Arlington, including the Gallery West and The Gallery at UT Arlington, the libraries, visiting artists and critics—when coupled with the metroplex cultural venues—will provide an exceptional base for meaningful and rewarding educational experiences.

The new program will invite and encourage non-traditional and traditional art experiences and will support interdisciplinary projects in the student's final thesis research presentation.

Objective

The mission of the Program in Studio Art is to:

1. Encourage and guide MFA students to successfully complete the recognized terminal degree in the practice of art.
2. Enable artists, filmmakers, and designers in the program to develop habits of:
   a. Self discipline
   b. Self confidence
   c. Proficiency in their work
   d. Open Communication
3. Enable students to:
   a. Make connections with various media and mediums to expand visual and conceptual vocabulary
   b. Meet distinguished artists, filmmakers and designers to enhance the meaningful on-going dialogue related to their work and future.
4. Provide studio space for students to explore methods of concept development, the exploration of time based media, reflection and development of personal work.
5. Encourage students to develop new skills and enhance existing ones. Expand the conventional concepts of the "studio" and are encouraged to develop their personal style and direction.
6. Encourage graduates to compete for professional positions in teaching, artistic fields and pursue careers as exhibiting artists, filmmakers/writers, and designers.

Admissions Requirements

A personal interview with the Graduate Advisor or members of the Studio Art faculty is recommended.

Three letters of recommendation are required, and it is suggested that at least two of the letters come from former educators or academic contact. A portfolio, transcripts, and letter of intent are also required. Please review the Art and Art History Web site for materials due dates.

Department of Art and Art History

www.uta.edu/art

Areas of Study and Degrees

Film and Video
Glass
Intermedia (Expanded Studio)
Visual Communication
M.F.A.

Master's Degree Plan

Thesis Exhibition Requirements

Chair

Robert Hower
335 Fine Arts
817-272-2891
rhower@uta.edu

Director, MFA Program

Robert Hower
335 Fine Arts
817-272-2891
rhower@uta.edu

Graduate Advisor/Coordinator

Nancy Palmeri
124B Studio Arts Center
817-272-2819

Graduate Faculty

Professors

Anderson, Keens, Hower, North, Wright

Associate Professors

Graham, Grame, Huerta, Jolly, Maroney, Ortiz, Palmeri, Plummer, Vaccaro, Weiss, Wood

Assistant Professors

Furniss, Hartley, McWilliams, Murillo, Northum, Reedus

Unconditional Admission

Applicants must possess a bachelor's degree from an accredited college or university. Submit transcripts from all previous college or university work, and three letters of recommendation are required of all applicants. In addition, applicants should have a minimum Grade Point Average (GPA) of 3.0, as calculated by the Graduate School. Applicants must submit a portfolio and statement of intent. The Art and Art History faculty review all materials and positively recommend acceptance into the M.F.A. program.

Provisional Admission

Those who have submitted their applications forms, but whose packets are incomplete, can be admitted provisionally if their GPA is at least 3.0, and if the program and the Graduate School have received official transcripts. In this case, incomplete materials could include letters of recommendation.

Probationary Admission

Those who have weaknesses in no more than two of the Degree Requirements (letters of recommendation, portfolio, statement of intent, and GPA), can be admitted on probation, with the condition that they make no less than a B in the first 12 hours of coursework in their art concentration. Such students must complete no fewer than 9 credits during the semester in which they are on probation.

Deferred Admission

Those who have weaknesses in no more than two of the Degree Requirements (letters of recommendation, portfolio, statement of intent, and GPA), and/or who have not submitted all of the materials required for unconditional admission, can have their applications deferred for one semester, until outstanding requirements and criteria are met.

International Student Admission

International applicants must have a bachelor's degree from a regionally accredited U.S. college or university or its foreign equivalent, a GPA of at least 3.0 as calculated by the Graduate School, 3 letters of recommendation, portfolio and letter of intent to be considered for admission. In addition, applicants whose native language is not English must demonstrate proficiency in English by earning a score of at least 550 on the paper-based Test of English as a Foreign Language (TOEFL) or a score of at least 213 on the computer-based test, or a minimum score of 40 on the Test of Spoken English (TSE). The Internet-based TOEFL examination (TOEFL iBT) will be accepted as an alternative to the paper and computer-based TOEFL for admission purposes. Students taking TOEFL iBT must attain a minimum total test score of 79 and meet or exceed the following scores on each of the sections of the test:

Writing: 22
Speaking: 21
Reading: 20
Listening: 16

Those who do not meet the English proficiency requirement must satisfactorily complete courses in the ESOL area, as approved by the program and the Graduate School.

Graduate Teaching Assistant

To be considered for a Graduate Teaching Assistant position, the candidate must be admitted unconditionally. Candidates whose native language is not English must submit a score 45 on the Test of Spoken English (TSE-A), a score of 23 on the TOEFL iBT Speaking subtest, or a score of 45 on UT Arlington's SEA test. GTA positions in the Department of Art and Art History are limited and are very competitive.

Fellowships

To be considered for a Dean's Fellowship the candidate must have a favorable review in most of the evaluation criteria. Candidates must be new students coming to The University of Texas Arlington, must have a GPA of 3.0 in their last 60 undergraduate credit hours plus any graduate credit hours of 3.0, and must be enrolled in a minimum of 6 hours in both long semesters to retain their fellowships. Fellowships in Department of Art and Art History are limited and very competitive.

Advisement and Supervisory Committees

The Graduate Advisor will advise all incoming graduate students. After a student has selected a supervisory committee and submitted a program of work, the major professor becomes his/her advisor. Students should consult the Graduate Student Handbook for details on forming a supervisory committee, creating a program of work and other requirements.

Degree Requirements

M.F.A. Course Requirements

The graduate course requirements for the M.F.A. of 60 semester credit hours are normally distributed over six semesters of a three-year program. The student will be required to spend a minimum of three semesters in the M.F.A. program with one academic year in residency as a full time student.

Specific Course Requirements:

Area of Concentration	39 semester credit hours
Supporting Studio Courses	9 semester credit hours
Art History	9 semester credit hours
Free electives	3 semester credit hours
Combination will total	60

Courses outside the area of concentration (supporting and free electives) should be taken from faculty other than the major professor. It is strongly recommended that the students study with a minimum of three additional faculty members during the course of his/her program. Students are also encouraged to take a free elective outside the Art and Art History Department.

The supervisory committee will approve the course options (work) and scholarly research. It is emphasized that this is a committee/department option, not a student option.

Studio Art (ART)

Concentration Required Courses:

ART 5330	CRITICAL PERSPECTIVES IN THE VISUAL ARTS & VISUAL COMMUNICATION
ART 5340, 5640	RESEARCH IN INTERMEDIA (STUDIO)
ART 5342, 5642	RESEARCH IN GLASS
ART 5355, 5655	RESEARCH IN VISUAL COMMUNICATION
ART 5360	TOPICS IN THE HISTORY OF ART (VARIED)
ART 5383, 5683	RESEARCH IN FILM/VIDEO
ART 5698	THESIS EXHIBITION

(6 HOURS OF CONCENTRATION COURSE)

Prescribed Elective Courses:

ART 5320	HISTORY OF ART CRITICISM
ART 5341, 5641	RESEARCH IN SCULPTURE
ART 5342, 5642	RESEARCH IN GLASS
ART 5343, 5643	RESEARCH IN PRINTMAKING
ART 5347, 5647	RESEARCH IN DRAWING
ART 5353, 5653	RESEARCH IN METALS
ART 5355, 5655	RESEARCH IN VISUAL COMMUNICATION
ART 5357, 5657	RESEARCH IN FILM/VIDEO
ART 5359, 5659	RESEARCH IN PHOTOGRAPHY DIGITAL IMAGING
ART 5363, 5663	RESEARCH IN CLAY
ART 5371, 5671	RESEARCH IN PAINTING
ART 5391	INDEPENDENT STUDY

Example Course Sequence:

FIRST YEAR

FALL	SPRING
5330 Critical Perspectives	5300 Topics in the History of Art
56xx Research in Concentration	56xx Research in Concentration
	53xx Research in Supporting Studio
9 Credits	12 Credits

SECOND YEAR*

FALL	SPRING
5360 Topics in the History of Art	53xx Research in Supporting Studio
56xx Research in Concentration	56xx Research in Concentration
53xx Free Elective	
12 Credits	9 Credits

THIRD YEAR

FALL	SPRING
53xx Research in Supporting Studio	53xx Research in Concentration
56xx Research in Concentration	**56xx Thesis Exhibition (Research in Concentration)
9 Credits	9 Credits

Total 60 credit hours required for MFA

*Mid-Program review completed after 30 credits

**Thesis Exhibition, Oral Exam and research paper completed during this semester. Summer opportunities may be available to complete required course work. This is dependent upon the faculty availability.

Graduate Review Exhibition Requirements

Each spring semester, the graduate students will be required to organize an exhibition of their work.

a. The number of work each student may exhibit will depend upon the number of exhibitors, size of work, etc., but we would expect that each student will be able to exhibit or screen several.
b. These exhibitions and screenings will be drawn from the work done by each student in the previous spring and fall semesters—and will therefore represent each student's most recent efforts.
c. Each student will write an "artist's statement" to accompany his/her work on exhibit.

At the end of the exhibition, the graduate students will hold a formal "closing." All graduate students are expected to attend.

Mid-Program Review Requirements

The preliminary examination for the M.F.A. degree at the University of Texas Arlington is the Mid-Program Review.

When the student has completed one-half of her/his program of study, the supervisory committee will conduct a comprehensive review of the student's work in order to ascertain if satisfactory progress is being made toward completion of the degree. The student will present all visual work done to this point, along with an outline and preliminary draft of the written document which is part of the thesis requirement (see below).

To pass, the student must receive a unanimous vote of the committee members. A failed review may be retaken once with permission from the Director of the MFA program and the MFA Graduate Studies Committee. If the student still does not pass, the Director of the MFA program will report the failure and the termination of the student's enrollment in the M.F.A. program to the Graduate School.

M.F.A. Thesis Requirements

The thesis requirement for the M.F.A. degree consists of the following:

- The Thesis Exhibition: A substantial body of original works of art to be exhibited or screened on campus at a time announced to all graduate faculty.
- A written document in which the candidate demonstrates proficiency in conducting research and in analyzing, interpreting and organizing material, as well as demonstrating the ability to communicate perceptions, insights, and conclusions.
- During the last semester of the MFA candidates study a final oral examination coordinated by the supervising committee will be completed.
- Satisfactory completion of the visual and written portions of the thesis and the final oral examination is required for the awarding of the M.F.A. degree.

Specific requirements for the written document are found in Guidelines for the M.F.A.

M.A. in Humanities with Art History Concentration

(See Program in Humanities for additional requirements)

The graduate course offerings in art history are provided to support other graduate degree programs, for example, an art history concentration in Humanities, and to meet the express needs of students. No program leading to a graduate degree in art or art history exists at this time.

Art (ART)

5000. SUPERVISED TEACHING STUDIO ART (1-0). Training in teaching methods and procedures for studio art classes, including weekly group meetings with the instructor and individual consultations. Prerequisite: graduate standing in studio art, or graduate standing and appointment as a teaching assistant. May be repeated.

5320. ART CRITICISM AND THEORY (3-0). A discussion of placing art within the context of the history of ideas.

5330. CRITICAL PERSPECTIVE IN THE VISUAL ARTS AND VISUAL COMMUNICATION (3-0). Seminar course that focuses on

graduate student interaction with visiting artists, scholars, curators, critic, designers, and filmmakers.

5340. RESEARCH IN INTERMEDIA (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and graduate advisor.

5341. RESEARCH IN SCULPTURE (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and the graduate advisor.

5342. RESEARCH IN GLASS (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and the graduate advisor.

5343. RESEARCH IN PRINTMAKING (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and graduate advisor.

5347. RESEARCH IN DRAWING (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and graduate advisor.

5353. RESEARCH IN METALS (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of the instructor and the graduate advisor.

5355. RESEARCH IN VISUAL COMMUNICATION (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and graduate advisor.

5359. RESEARCH IN PHOTOGRAPHY DIGITAL IMAGING (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and graduate advisor.

5360. TOPICS IN THE HISTORY OF ART AND DESIGN (3-0). Special seminar/topics course focusing on enhancing the art and design knowledge base of MFA candidates in the areas of film/video, visual communication, intermedia-expanded studio, and glass as art.

5363. RESEARCH IN CLAY (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and the graduate advisor.

5371. RESEARCH IN PAINTING (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and the graduate advisor.

5383. RESEARCH IN FILM/VIDEO AND SCREENWRITING (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and the graduate advisor.

5391. INDEPENDENT STUDY (6-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and the graduate advisor.

5392. SPECIAL TOPICS IN INTERMEDIA (2-4). Subjects of immediate interest in various fields of intermedia art; to compliment faculty research specializations.

5394. SPECIAL TOPICS IN GLASS (2-4). Subjects of immediate interest in various fields of glass art; to compliment faculty research specializations. May be repeated for credit. Permission of instructor required.

5396. SPECIAL TOPICS IN ART HISTORY (3-0). Subjects of immediate interest in various fields of art history; to compliment faculty research specializations. May be repeated for credit as course content changes. Permission of the instructor required.

5397. SPECIAL TOPICS IN FILM/VIDEO (2-4). Subjects of immediate interest in various fields of film and video production; to compliment faculty research specializations. May be repeated for credit. Permission of the instructor required.

5640. RESEARCH IN INTERMEDIA (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and the graduate advisor.

5641. RESEARCH IN SCULPTURE (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and the graduate advisor.

5642. RESEARCH IN GLASS (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and the graduate advisor.

5643. RESEARCH IN PRINTMAKING (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and the graduate advisor.

5647. RESEARCH IN DRAWING (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and the graduate advisor.

5653. RESEARCH IN METALS (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and the graduate advisor.

5655. RESEARCH IN VISUAL COMMUNICATION (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and the graduate advisor.

5659. RESEARCH IN PHOTOGRAPHY DIGITAL IMAGING (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and the graduate advisor.

5663. RESEARCH IN CLAY (6-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and the graduate advisor.

5671. RESEARCH IN PAINTING (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and the graduate advisor.

5683. RESEARCH IN FILM/VIDEO AND SCREENWRITING (1-0). Independent and directed research in the student's area of concentration. Studio hours to be arranged. May be repeated for credit. Prerequisite: graduate standing in studio art and consent of instructor and the graduate advisor.

Objective

The Master of Arts in Communication is designed to provide a means of career enhancement for Speech Communication, media and organizational professionals. The program includes the areas of Communication Studies, Mass Communication and Communication Technology and is designed to meet the educational needs of recent undergraduates, media professionals and organizational professionals who need to extend their knowledge of communication processes at the interpersonal, organizational, and mass media levels. The program is designed to be flexible so that specific needs and goals of students may be supported. All students complete foundation courses in communication theory and research methods during their first semester and work with the Graduate Advisor to select courses in communication, marketing, political science and other approved disciplines that support their goals. Specifically, the program's curriculum incorporates communication principles with the technology required in business and industry today and emphasizes the integrated nature of the communication discipline.

The program offers specialized education in the management of media resources, the changing role of the media in an information society, and a theoretical and ethical framework for considering the impact of the media upon society.

Organizational professionals can focus on working with both external and internal constituencies and communication processes of management, training and development, and human resources.

Admission Standards

Prospective students must apply for admission through, and supply all information required by the Graduate School. In addition, the following information will be considered in determining admission status into the program: undergraduate GPA, GRE scores, letters of recommendation and an essay. All criteria are considered together; no single factor will eliminate a prospective student from consideration.

The following table outlines specific requirements for unconditional and probationary admission.

Graduate Admission Standards

Admission Criteria	Unconditional		Probationary
GPA on last 60 hours of Undergraduate Program (as calculated by Graduate School of UT Arlington)	3.3	3.0 [1]	2.8-2.99
GRE	Evaluated	Evaluated	Evaluated
3 letters of recommendation	Evaluated	Evaluated	Evaluated
Essay	Evaluated	Evaluated	Evaluated

Administration

[1] Minimum undergraduate GPA requirement for unconditional admission is a 3.0 on a 4.0 scale.

Students not meeting unconditional criteria will be reviewed by a committee of Chair of the Department of Communication, Graduate Advisor, and Graduate Program Committee. The committee will

Department of Communication

www.uta.edu/communication

Areas of Study and Degrees

Communication
M.A.

Master's Degree Plans

Non-Thesis and Thesis

Chair

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Graduate Advisor

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Graduate Faculty

Professors
Andresen, McCallum

Associate Professors
Christie, Ingram, Markham Shaw

Assistant Professors
Broadway, Cereijo, Clark, Grant, Jang, Segvic, Zwarun

review the following: a minimum undergraduate GPA of 2.8 (in last 60 hours of undergraduate work); GRE scores (verbal, analytical and quantitative); letters of recommendation; and essay. An applicant who performs successfully on a majority of these criteria may be admitted on probation. The committee will make a final admission decision and document that decision for the student record.

Unconditional Admission

Criteria for unconditional admission status are designated in the previous table. Decisions on unconditional admission are made after considering the minimum GPA noted in the graduate admission standards and all other criteria noted in the preceding paragraph.

Probationary Admission

Criteria for probationary admission status are designated in the previous table. When on probation, students can make no grade lower than a 3.0 in their first 12 semester hours of graduate coursework.

Provisional Admission

An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements.

Deferred Status

Deferred decision is granted when a file is incomplete or when a denied decision is not appropriate.

Denial of Admission

An applicant will be denied admission if he or she has less than satisfactory performance on a majority of admission criteria listed in the previous table.

Fellowship Criteria

Fellowship selection will be based on the highest GPA in the last 60 hours of the bachelor's degree program. Candidates for fellowships must meet the following criteria:

- New students coming to UT Arlington in the fall of each semester.
- Have a GPA of at least 3.0 in their last 60 hours of their bachelor's degree program.
- Minimum 3.0 GPA in graduate credit hours.
- Enrolled in a minimum of 6 semester hours in the long semesters.

Degree Requirements

The Master of Arts in Communication degree offers non-thesis/coursework and thesis options. The non-thesis/coursework option will require 36 hours of coursework. The thesis option will require 30 hours that will include 24 credit hours of coursework and a 6-credit-hour thesis. A final comprehensive examination will be required of students in all options.

Courses required of all students in the proposed program in the first semester:

COMM 5300	Advanced Theories in Communication	3
COMM 5305	Communication Research Methods	3
	Total	6

Courses students may elect to take:

Thesis Option: Select at least 9 hours from the following communication electives.

Non-Thesis/coursework Option: Select at least 21 hours from the following communication electives.

COMM 5310	Theories in Persuasion
COMM 5316	Corporate Communication Strategies
COMM 5320	Advanced Visual Communication
COMM 5321	Advanced Internet Marketing Communication
COMM 5323	Advanced Web Site Communication
COMM 5332	Advanced Professional Communication
COMM 5335	Global Communication
COMM 5341	Media Management
COMM 5345	Communication Campaigns
COMM 5392	Seminar

Graduate courses outside the department may be taken with the approval of the Graduate Studies Committee. Students should submit a letter to the graduate advisor including course title, course description, and statement of value to the program of study.

Non-Thesis Option. (36 semester hours total) 36 semester credit hours of coursework are given. The final comprehensive examination will consist of an oral exam covering the coursework. Additional remedial work may be required if deemed necessary by the student's committee. Students failing the examination will not be allowed to test again.

Thesis Option. (30 semester hours total) 24 semester credit hours of coursework and a thesis, for which 6 semester hours are given. The final comprehensive examination will consist of an oral defense of the thesis prospectus and an oral defense of the thesis. Additional remedial work may be required if deemed necessary by the student's committee.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Communication (COMM)

5191. CONFERENCE COURSE (1-0). Topic assigned on an individual basis, covering individual research or study in the designated areas. Can be taken more than once. Prerequisite: permission of the department.

5300. ADVANCED THEORIES IN COMMUNICATION (3-0). Advanced study of communication theories: interpersonal, organizational, mass media and intercultural.

5301. SUPERVISED TEACHING (0-3). Application of theory to the practices of teaching college courses in communication. Students will handle all aspects of the classroom including lecturing, conducting class discussions, issuing assignments, grading and assigning grades under the supervision of the course director. No unit credit will be allowed toward advanced degree.

5305. COMMUNICATION RESEARCH METHODS (3-0). Study and application of communication research, design and methodology. Students will apply statistics in communication research and complete a research project/paper.

5310. THEORIES IN PERSUASION (3-0). A comparison of traditional with contemporary behavioral science theories of persuasive discourse and their supporting research.

5316. CORPORATION COMMUNICATION STRATEGIES (3-0). Examines organizational communication strategies with special emphasis on how communication affects corporate constituencies. Corporate image and identity are linked to corporate advertising, press releases, financial communication, internal communication and crisis communication.

5320. ADVANCED VISUAL COMMUNICATION (3-0). Theory of visual communication in technical communication. Practice includes conceptualization, development and production

5321. ADVANCED INTERNET MARKETING COMMUNICATION (3-0). Study of the use of information technology to optimize advertising, promotion, public relations and sales functions. Examines an infrastructure of the Internet and how it affects information retrieval, Web design, Web site management and Web site security. Discusses research strategies, usage trends and social implications.

5323. ADVANCED WEB SITE COMMUNICATION (3-0). Advanced study of mass media and organizational Web site information architecture, design, aesthetics, and Web site management; communication theory as applied to operational Web sites for profit and non-profit organizations.

5332. ADVANCED PROFESSIONAL COMMUNICATION (3-0). Advanced study of the theory and practice in written and oral presentations with emphasis on the application of communication theory in organizational and technical professions. Development of strategic communication plans to influence audience perceptions and evaluate changes.

5335. GLOBAL COMMUNICATION (3-0). Examination of verbal and nonverbal barriers to effective intercultural and international communication. Developing effective communication in advanced study of communication theories: interpersonal, organizational, mass media and intercultural contexts and exploring the definition and impact of global communication.

5341. MEDIA MANAGEMENT (3-0). Study of media policy and regulation; media, cultural, and management theories; media economics; accounting and finance; business strategy, management and marketing.

5345. COMMUNICATION CAMPAIGNS (3-0). Advanced study of communication theories and research with the goal of developing strategic communication plans, including the selection of the appropriate vehicles and creative tactics. Team project required.

5392. SEMINAR (3-0). Special topics. Topic varies from semester to semester. May be repeated when topic changes.

5394. PROJECT (3-0). Student completion of a project intended for a professional audience, or a professional media project intended for publication or distribution to a general or targeted audience.

5398. THESIS (3-0). Student completion of a research project on a subject of primarily theoretical interest, intended for an academic audience. Prerequisite: satisfactory completion of coursework and consent of thesis advisor.

5698. THESIS (6-0). Student completion of a research study on a subject of primarily theoretical interest, intended for an academic audience. Prerequisite: satisfactory completion of thesis proposal defense and consent of thesis advisor.

Department of Criminology and Criminal Justice

www.uta.edu/criminology

Area of Study and Degree
Criminology and Criminal Justice
M.A.

Master's Degree Plans
Thesis and Non-Thesis

Chair
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Graduate Advisors
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Graduate Faculty
Associate Professors
Bing, del Carmen

Assistant Professors
Butler, Dobbs, Fowler, Rodriguez, Sarver, Smith, Stickels

Objectives

The program leading to the MA degree in criminology and criminal justice offers a comprehensive examination of the criminal justice system, an exploration of criminal and delinquent behaviors, a foundation in research and statistics, and an opportunity to explore other relevant topics of interest to the student.

It is designed for:

- Pre-professional students who wish to pursue a career in some aspect of criminal justice, or in a related field, and to develop the perspectives and knowledge appropriate to doing so;
- In-service professionals who wish to enhance and broaden their knowledge in this and related areas of study;
- Students pre-professional or in-service who wish to pursue further relevant post-graduate studies, whether academic or professional.

To meet these objectives, and to develop a broadly educated student, the program offers both thesis and non-thesis options.

The coursework (non-thesis) option is generally recommended for students who do not intend to pursue doctoral-level studies. It does not require applicants to have prior criminal justice employment and is designed to provide a base of knowledge and skills necessary to enter and/or administer criminal justice related programs.

The thesis option is generally recommended for students wishing to pursue further education in professional schools or doctoral level studies. It is designed to prepare students to conduct research in criminology and criminal justice and actively participate in the development of knowledge. Students choosing the thesis option are required to take a six-hour thesis course during the semester in which the thesis is defended. Non-thesis students take two additional courses constituting six credit hours.

With the approval of the Graduate Advisor, students may also use their elective hours to concentrate on a particular field of study, such as sociology, political science, corrections, policing, or a multidisciplinary approach to a particular focus, such as administration-or research. Thesis students take 15 hours of elective courses and non-thesis students take 21 hours.

Admission and Degree Requirements

The MA degree in criminology and criminal justice requires a minimum of 36 semester hours, regardless of the option selected, and includes 15 semester hours of required core coursework.

- **Core:** CRCJ 5301, CRCJ 5309, CRCJ 5310, CRCJ 5327, and CRCJ 5350. One of the following may be taken in lieu of CRCJ 5309 with the approval of the Graduate Advisor: SOCI 5303, SOCW 5322 or URPA 5302.
- **Electives:** The number of semester hours available for electives ranges from a minimum of 15 to 21, depending on the option selected (thesis or non-thesis). Ordinarily, elective hours are taken in areas of particular interest to the student, with the advice and approval of the Graduate Advisor.

All candidates for the graduate degree must pass a final comprehensive examination, written, oral, or both written and oral. The scope, content, and form of this examination will be determined by the student's supervising committee.

The criminology and criminal justice graduate program adheres to the following admission criteria.

Unconditional Admission

In addition to having satisfied the requirements set forth by the UT Arlington Graduate School, as outlined in the graduate catalog, applicants seeking unconditional admission to the CRCJ graduate program are required to meet the following four criteria:

- Must have successfully completed a baccalaureate degree in criminology/criminal justice or related discipline.
- A minimum GPA of 3.0 in the last 60 hours of undergraduate work as calculated by the Graduate School.
- A minimum of 440 on both verbal and quantitative subtests of the GRE.
- Must submit three letters of recommendation addressing the applicant's potential for success in the graduate program from persons knowledgeable of the applicant's abilities.

Applicants meeting all four of the criteria will be granted unconditional admission into the CRCJ Graduate Program. Applicants who lack one of the above criteria may be considered for probationary admission.

Probationary Admission

Applicants who fail to meet the four criteria for unconditional admission may be considered for probationary admission. Applicants who fail to meet the GPA or GRE requirements for unconditional admission may be granted probationary admission if the GPA falls between 2.5 and 3.0 and the remainder of the application package is satisfactory. Applicants admitted on probation will remain in that status until completing 12 hours of graduate coursework with no grade lower than a B.

Deferred Admission

In the event an applicant does not meet the minimum criteria established for unconditional or probationary admission, yet nonetheless is judged by the graduate advisor, in consultation with the CRCJ Graduate Studies Committee, to show promise, the admission decision may be deferred, with instructions provided to the student indicating the course of action to be taken prior to subsequent review. Admission decisions may also be deferred if the application package is incomplete.

Provisional Admission

An applicant unable to supply all required documentation prior to the admission deadline, but who otherwise appears to meet admission requirements may be granted provisional admission.

Denial

Applicants who do not satisfy all of the criteria for any of the above categories will be denied admission.

Fellowships

Fellowships, when available, will be awarded on a competitive basis. Nominees for the Graduate School Master's Fellowship in the criminology/criminal justice graduate program will be selected based on the following criteria:

- Candidates must be new students entering in the fall semester, with a minimum of 6 hours of enrollment in both long semesters to retain their fellowships.
- The minimum undergraduate GPA requirement is 3.00, as calculated by the Graduate School, plus a GPA of 3.0 for any graduate credit hours.
- Transcript of a completed bachelor's degree in criminology/criminal justice (or appropriate related field) from an accredited institution.
- Three letters of recommendation (may use the same letters submitted for consideration into the criminology/criminal justice graduate program).
- A written statement explaining the applicant's reasons for graduate study in criminology/criminal justice.

Dual Degree Program

Students in criminology and criminal justice may participate in one of three dual degree programs whereby they can earn a Master of Arts in Criminology and Criminal Justice and 1) a Master of Science in Social Work, 2) a Master of Arts in Political Science, or 3) a Master of Public Administration. By participating in a dual degree program, students can apply a number of semester hours jointly to meet the requirements of both degrees, thus reducing the total number of hours which would be required to earn both degrees separately. The number of hours which may be jointly applied ranges from nine to 18 hours, subject to the approval of Graduate Advisors from both programs.

To participate in the dual degree program, students must be admitted to each program and must submit a separate Program of Work for each degree. Those interested in a dual degree program should consult the appropriate Graduate Advisor(s) for further information on course requirements. See also the statement on Dual Degree Programs in the general information section of this catalog.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Criminology and Criminal Justice (CRCJ)

5196. CONFERENCE COURSE CRJU (1-0).

5301. PROSEMINAR IN CRIMINOLOGY AND CRIMINAL JUSTICE (3-0). An exploration of classical and contemporary literature in criminology and criminal justice. Theoretical perspectives and empirical research will be used to examine criminal behavior and the structure, function, operation, and interaction of the criminal justice system components as well as current practices and future trends in criminology and criminal justice.

5309. RESEARCH METHODS IN CRIMINAL JUSTICE (3-0). Examination of research methodology in criminal justice. Special emphasis on methods and techniques for conducting research in criminal justice, including a review of problems encountered in sampling and survey research, field research, public policy implementation, and program evaluation.

5310. STATISTICS AND RESEARCH PRACTICES IN CRIMINAL JUSTICE (3-0). Advanced methods and techniques of research and research design in criminology and criminal justice. Course will cover pure and applied research and expose students to contemporary methodological and analytical issues. Students will be instructed on the use of existing CRCJ databases as well as the collection of new data and particular aspects of SPSS (Statistical Package for the Social Sciences software) and advanced data analysis.

5318. CRIMINAL JUSTICE PERSONNEL ADMINISTRATION (3-0). Personnel administration and management in criminal justice agencies and institutions; analyzes functions of recruitment, selection, hiring, placement, evaluation, dismissal, benefits systems, minority recruitment, training, education, promotion, career development, and retirement.

5319. ISSUES IN POLICING (3-0). In-depth analysis of historical, current, and future issues in policing and police administration. Emphasis will be placed on the role of police in society, police-citizen relationships, and empirical evaluations of police effectiveness, police behavior, and programs and strategies.

5327. JUDICIAL AND CONSTITUTIONAL PROCESSES (3-0). Examination of the structure, functions, and operations of the courts, with special attention to contemporary constitutional issues and their impact on the criminal justice process.

5332. CORRECTIONAL THEORY AND PRACTICE (3-0). Examination of social, psychological, political, and historical bases of interventions in the control and disposition of offenders. Emphasis on contemporary policies, practices, and problems in institutional, semi-institutional, and community-based corrections.

5342. ETHICS IN CRIMINAL JUSTICE (3-0). This course focuses on the ethical decisions and dilemmas encountered in the criminal justice system. Topics covered include criteria for ethical decision making, professional codes of ethics, and ethical and legal dilemmas faced by criminal justice professionals.

5350. THEORETICAL CRIMINOLOGY (3-0). Explores the etiology of crime, theory development and crime causation. Emphasis is on theoretical perspectives and policy implementation.

5351. TERRORISM AND CRIME (3-0). This course examines the origins, nature, and operational characteristics of terrorist groups. Students are exposed to topics ranging from the definition of "terrorism" to the unique characteristics of terrorist cells in the United States and abroad. Particular emphasis is on historical and contemporary terrorist attacks against the United States.

5352. WOMEN, CRIME AND CRIMINAL JUSTICE (3-0). A summary of issues related to women as criminal offenders, victims of crime, and professionals in the criminal justice system. The course focuses on crimes women are most likely to commit and/or be processed through the criminal justice system for, the punishment of female offenders, the types of victimizations most often experienced by women, and employment issues unique to women employed in the criminal justice system. While the main emphasis of the course will be on the experiences of women in the U.S., attention will also be given to women on a global scale.

5353. CRIMINAL JUSTICE ORGANIZATIONAL THEORY AND MANAGEMENT THOUGHT (3-0). An examination of organizational theory with specific application to the operation and management of criminal justice agencies. The historical precedents and emergence of contemporary perspectives are presented with their implication for effective functioning of the criminal justice system.

5360. RACE, CRIME JUSTICE AND THE LAW (3-0). This course explores the role of race and ethnicity within the juvenile and criminal justice system. Emphasis is on the social construction of crime, racial and ethnic inequalities, the law and policies/practices that impact blacks and other racial minorities.

5366. JUVENILE DELINQUENCY AND JUVENILE CORRECTIONS (3-0). Correctional modes are discussed and applied to juvenile offenders. Theoretic approaches to causation, modification, and control of delinquent behaviors are presented, and policy implications and limitations are discussed. Historical and contemporary perspectives and approaches are presented in the context of evolving and emerging practices and procedures.

5370. PRACTICUM (3-0). Professional or pre-professional experience in a criminal justice related agency or institution with the approval and direction of the student's supervising professor; intended for non-thesis option students who do not have professional experience related to criminal justice.

5380. CRIMINAL JUSTICE SEMINAR (3-0). Synthesis course for advanced graduate students. Special emphasis on examination of constructs of crime/criminals, justice and systems. Requires individual research in area of particular concern to student.

5381. CRIME AND PUBLIC POLICY (3-0). This course addresses crime and criminal justice policy. Emphasis is on the examination of media and political forces that shape criminal justice responses and policy initiatives. In the context of theoretical paradigms, the impact of race, class, economics, and gender on development of criminal justice public policy is examined.

5393. TOPICS IN CRIME AND CRIMINOLOGY (3-0). May be repeated for credit as the topic changes.

5394. TOPICS IN JUSTICE ISSUES (3-0). May be repeated for credit as the topic changes.

5396. CONFERENCE COURSE IN CRIMINAL JUSTICE (3-0). Reading and research in a specialized area of criminal justice under the direction of a member of the graduate faculty.

5398. THESIS (3-0).

5698. THESIS (6-0).

Department of English

www.uta.edu/english

Areas of Study and Degrees

English

M.A., Ph.D.

Humanities

M.A. (See Program in Humanities)

Master's Degree Plans

Thesis and Non-Thesis

Chair

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Graduate Advisor

Tim Morris
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Graduate Faculty

Professors

Cohen, Faris, Morris, L. Porter, Roemer

Associate Professors

Alaimo, Frank, Ingram, May, Smith

Assistant Professors

French, Gustafson, Henderson, Matheson, K. Porter, Richardson, Stodnick, Tigner

Objectives

The Department of English offers a wide variety of graduate courses to meet the needs of students with a diversity of interests and academic backgrounds who wish to enhance their awareness of their literary and cultural environment by additional formal instruction or to increase their professional competence.

The Master of Arts program in English is designed to enable students to learn about, critique, and work in teaching, scholarship, writing, or other fields which value a strong background in language, rhetoric, and the study of culture through texts.

Early in the program each student takes one core course. It serves as an introduction to theory as it is currently used in English scholarship.

Each student plans an individual program of coursework, with the help of the Graduate Advisor and the chair of the students' thesis or exam committee. This program draws on the department's varied courses, which offer students ways to study literature, rhetoric, and criticism, as well as methods of studying culture through texts and traditions of discourse.

The M.A. in English provides a strong grounding in scholarly methods and in theory, making it an ideal preparation for doctoral study in disciplinary or interdisciplinary programs. M.A. graduates in English pursue careers in journalism, educational administration and services, publishing, and many business fields that demand writing and communication skills. The M.A. in English is also useful for prospective or experienced teachers who want both to sharpen their ability to teach literature and writing, and to advance professionally.

Doctoral Program of Study

The doctoral program in English prepares students at the most advanced stage in the interpretation and composition of texts. The program emphasizes rigorous critical study in the fields of rhetoric, composition, critical theory, cultural studies, pedagogy and literary studies. Rather than offering separate tracks, the program allows the student in consultation with the Graduate Advisor and the student's dissertation committees to design a program of work that best suits their particular scholarly interests and career goals. The combination of a diversity of course offerings, required and elected courses, and the requirement that each student define a focus that reflects his or her intellectual and career interests provides students with the flexibility to adapt to changes in English studies. Specifically, the English doctoral program prepares students for careers in writing, including electronic and technical writing, as well as in teaching in community colleges, small colleges or regional state universities. The department trains students for college-level teaching several ways, but most importantly, by offering graduate courses in the teaching of literature and the teaching of composition. Doctoral students in English present papers at scholarly conferences, publish essays in scholarly journals and participate in other professional activities.

Writing Sample and Recommendations

In addition to the admission requirements set by the Graduate School, the English Department requires all international students to have speaking, reading, and writing competence in English and all applicants to submit to the Graduate Advisor a sample of their best academic writing. Three letters of recommendation should be sent directly to the Graduate Advisor. At least two of the letters of recommendation should be academic in nature.

Admissions Requirements

Admission Procedures

For both the M.A. and the Ph.D., we consider four different admission criteria: 1) GPA; 2) GRE; 3) writing sample; and 4) letters of recommendation. Prospective students should submit all the required materials and scores i.e. official transcripts, GRE scores, a writing sample, and recommendation letters in order for their application to be processed. All criteria are considered together, in a holistic way. No single factor will eliminate a prospective student from consideration. For unconditional admission, candidates must meet the following standards for at least three of the four criteria.

Criteria for Admission: Master's Program

1. A minimum GPA of 3.0 in undergraduate work, with a minimum of 3.4 in the English major or upper-level English courses.
2. GRE scores: a minimum of 500 verbal and at least a 500 on the old analytical portion or at least a 4.5 on the new Analytical Writing measure. (We will not consider the math scores. We do not require the English subject test.)
3. A writing sample that demonstrates a sophisticated prose style and the ability to construct complex arguments.
4. Three letters of recommendation that attest to the prospective student's intellectual and scholarly potential. At least two of these should be from former professors.

Criteria for Admission: Ph.D. Program

1. A minimum GPA of 3.5 in the student's M.A. in English or a very closely related field. (If the M.A. is not in English, we will consider the undergraduate GPA as well as that of the M.A. Moreover, if the M.A. is not in a very closely related field, the prospective student will be admitted to the M.A. program in English, not the Ph.D.)
2. GRE scores: GRE scores: a minimum of 500 verbal and at least a 500 on the old analytical portion or at least a 4.5 on the new Analytical Writing measure. (We will not consider the math scores. We do not require the English subject test.)
3. A writing sample that demonstrates a sophisticated prose style, the ability to engage in intellectually rigorous modes of analysis, and a strong knowledge of rhetoric, composition studies, literary studies, cultural studies, or interdisciplinary critical theory.
4. Letters of recommendation that attest to the student's intellectual and scholarly potential. At least two of these must be from former professors; at least one must be a professor from the student's Master's program.

Deferred Decision

A deferred decision may be granted when a file is incomplete or when a denied decision is not appropriate.

Provisional Admission

An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission.

Probationary Admission

For both M.A. and Ph.D., students may be admitted on probation under two different scenarios: 1) if the prospective student's application materials do not meet two of the four standards, but are outstanding in the remaining two categories; or 2) if the prospective student's materials come extremely close to meeting the standards in at least three of the four areas. Students on academic probation must make no grade lower than a "B" in the first 12 hours of their graduate work in order to remain in the program.

Denial

Admission will be denied if the application materials 1) do not meet the standards in three of the four categories; or 2) if the materials do not meet the standards in two of the categories, and in the remaining two categories meet the standards but in an unexceptional manner.

Deficiency Courses

Students who wish to pursue the Master's degree but who do not have an undergraduate major in English will probably be required to take between 3 and 12 hours in specified advanced undergraduate courses and make no grade lower than a "B." These courses will not be counted for graduate credit, but instead will provide the necessary background for pursuit of the graduate degree.

Fellowships

The same four criteria used to determine admission to the M.A. or Ph.D. programs will be considered when awarding graduate fellowships.

The Graduate School stipulates that: "Fellowships, when available, will be awarded on a competitive basis based on the following criteria: Candidates must be new students entering in the fall semester, with a minimum of 6 hours of enrollment in both long semesters to retain their fellowships. The minimum undergraduate GPA requirement is 3.00, as calculated by the Graduate School."

Graduate Teaching Assistantships

Please consult Dr. Audrey Wick, the Director of First Year English, for more information on Graduate Teaching Assistantships.

Degree Requirements

Master of Arts

The Master of Arts degree in English has thesis and non-thesis options. Under either the thesis or the non-thesis option, 5300: Theory and Practice in English Studies is required. It must be taken within a student's first 12 hours of study. Enrollment requires the approval of the Graduate Advisor in English.

The thesis option is a 30 hour program and requires 24 hours of coursework (a three hour core course and 21 hours of electives) and at least six hours of thesis. The degree culminates with the defense of thesis. Students must apply for the thesis option during their 24th hour of coursework. A student who elects to write a thesis must select a topic in consultation with his/her thesis director. Before the student registers for thesis, a Thesis Committee (a director and two readers) must be established and the thesis prospectus must be approved by the Thesis Committee.

The non-thesis option requires a 36 hour program of coursework (a three hour core course and 33 hours of electives) and a comprehensive examination on coursework.

Under either thesis or non-thesis option, the coursework of the master's candidate must be approved in advance by the Graduate Advisor, who should be consulted on all problems related to the student's program. New students must consult with the Graduate Advisor to

obtain additional program requirements and a copy of the English Graduate Student Handbook. Regular counseling sessions will be scheduled each year. Notification of specific time and place will be sent to all students who have been accepted into the graduate program.

Graduate standing is prerequisite for the courses listed below. Courses so designated may be repeated for credit as often as their subject matter changes. The titles are general descriptions. Students should consult the Department of English each semester for more specific information about the individual offerings.

Doctor of Philosophy

Thirty semester hours of coursework beyond the M.A., followed by a minimum of 9 hours of dissertation work (ENGL 6999), are required. All students are required to take ENGL 5300: Theory and Practice during their first semester unless they have already taken 5300 while in the M.A. program and received a grade of B or higher. All students are also required to take 5311: Foundation of Rhetoric OR 5359: Argumentation Theory as early in their programs as possible.

Students must consult with the Graduate Advisor and the chair of their dissertation committee to carefully construct a coherent focus for their coursework and comprehensive examinations. Students are allowed to take 9 hours of coursework outside the English department. During the first year of coursework all students must pass English 5300 with a grade of B or higher in order to remain in the program. After a student completes the first year of coursework, the Graduate Advisor, in consultation with the graduate faculty, will determine whether the student has demonstrated the potential to successfully complete the program and, consequently, whether the student will be allowed to continue in the program.

The Ph.D. track in English requires basic proficiency in translation in one natural language other than English. The language must relate to the student's dissertation research and career goals. Some committees may require an additional language, depending on the student's area of specialization. After completing coursework and satisfying the foreign language requirement, the student will take a written comprehensive examination. While studying for the comprehensive exams, students may enroll in English 6391: Graduate Readings, supervised reading for the Ph.D. exam, graded R. By the end of the first semester after successfully completing the comprehensive examinations, the students must submit a dissertation prospectus to their committee. The dissertation must be an original, substantial and significant contribution to a scholarly field. Students should work closely with the chair of their committee while researching and writing their dissertation. While researching and writing their dissertation, students must enroll in dissertation hours (ENGL 6399, 6699 or 6999). In the final semester of dissertation work, students must enroll in ENGL 6999. Once the student, the chair of the committee, and the primary readers agree that the dissertation is sufficiently completed, the student may schedule the defense. The student must furnish each committee member with a copy of the dissertation, including notes and bibliography, at least three weeks prior to the defense date. The defense of the dissertation is oral. The defense is open to all members of the faculty, graduate students and invited guests of the university community. Questioning of the candidate will be directed by the student's dissertation supervising committee, but any person attending the defense may participate. Committee members may request that the dissertation be further revised and may withhold final approval of the dissertation until the revisions have been made. For more specific information regarding degree requirements, please consult the Graduate Handbook of the Department of English.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

English (ENGL)

5191. INDEPENDENT STUDY (1-0). Supervised independent study at the M.A. or Ph.D. level.

5300. THEORY AND PRACTICE IN ENGLISH STUDIES (3-0). Core graduate course, introduction to graduate study in English. Covers a wide range of methodological and theoretical approaches to, as well as current issues in, criticism, rhetoric, and literary studies. Enrollment requires the approval of the Graduate Advisor in English.

5301. MEDIEVAL ENGLISH LITERATURE (3-0). English literature of the period before 1500. May include Old English poetry, Anglo-Latin prose, William Langland, the alliterative revival, romances, Malory, and Chaucer.

5302. 16TH CENTURY BRITISH LITERATURE (3-0). Non-dramatic literature of the 16th century, including works by Thomas More, Sir Philip Sidney, Sir Walter Raleigh, John Skelton, Edmund Spenser, and Elizabeth I.

5303. 17TH CENTURY ENGLISH LITERATURE (3-0). Poetry and prose of the 17th Century. May include a study of Milton and/or a study of writers and motifs of the period.

5304. RESTORATION AND 18TH CENTURY BRITISH LITERATURE (3-0). Drama, poetry, fiction, and essays from 1660 to 1798. Includes writers such as John Dryden, Aphra Behn, Alexander Pope, Samuel Johnson, Henry Mackenzie, Ignatio Sancho, and Maria Edgeworth, as well as issues of the period such as the nature of reason.

5305. ROMANTIC BRITISH LITERATURE (3-0). Poetry and fiction from 1798 to 1837. Includes writers such as William and Dorothy Wordsworth, Mary and Percy Shelley, Felicia Hemans, and Walter Scott, as well as issues such as the meaning of nature.

5306. VICTORIAN ENGLISH LITERATURE (3-0). Concepts and problems in texts by Victorian novelists, poets, and essayists (writers will vary). Attention to historical and cultural as well as literary issues.

5307. 19TH CENTURY BRITISH LITERATURE AND CULTURE (3-0). An overview of the writings and culture of the long 19th century in Britain from 1798 to 1914. Makes connections between Romantic and Victorian periods, covers literary and other relations

with the empire, and includes significant non-literary figures such as Darwin and Freud.

5308. SHAKESPEARE (3-0). Representative works of Shakespeare. May vary from comprehensive readings in the dramatic literature to intensive examination of certain plays, or to other related topics.

5311. FOUNDATIONS OF RHETORIC AND COMPOSITION (3-0). An intellectual and institutional history of rhetoric and composition studies. Special attention will be given to the history and ethics of writing instruction; the importation of classical rhetoric into contemporary composition classrooms; the institutional formation of the field and its ambiguous status in the academy; and the major contemporary pedagogical approaches (e.g., expressivism, cognitivism, social constuctionism). May also address recent topics that have attracted the attention of the field (e.g., dialogism, institutional critique, plagiarism, post-process theory, service learning, writing across and beyond the curriculum).

5313. 20TH CENTURY BRITISH LITERATURE (3-0). A study of English and Irish writing in the 20th Century; may focus on major authors, themes, or topics.

5320. SELECTED READINGS IN AMERICAN LITERATURE BEFORE 1800 (3-0). Designed to establish the diversity of our early literature. Includes Indian oral literature, travel accounts, Puritan writing, diaries, autobiography, poetry, drama and fiction. Cultural context stressed.

5322. 19TH CENTURY AMERICAN LITERATURE (3-0). Examines significant authors, forms, and aesthetic movements within literary, historical, and cultural contexts. Writers examined may include established figures associated with traditionally recognized forms, movements, and eras, such as Romanticism, the domestic novel, the American Literary Renaissance, slave narratives, Realism, and Naturalism, as well as non-canonical authors and less-recognized forms and movements.

5323. AMERICAN LITERATURE SINCE 1900 (3-0). Includes representative works of multiple authors selected for the study of modern and contemporary themes and methods.

5324. TOPICS IN AMERICAN LITERARY GENRES (3-0). Concentrates on the nature and aesthetic-cultural significance of one literary genre. Genres examined may include, but are not limited to, poetry, drama, fiction, autobiography, travel literature, and oral narratives. May be repeated when content changes.

5326. TOPICS IN AMERICAN LITERATURE BEFORE 1900 (3-0). May focus on one to three writers such as Melville, Hawthorne, or Emerson, or a significant theme or movement such as the rise of Realism, the representation of women, or women's fiction. May be repeated when content changes.

5327. TOPICS IN 20TH CENTURY AMERICAN LITERATURE (3-0). May focus on one to three writers such as Faulkner, O'Neill, or Morrison, or a significant theme or movement such as Modernism and Postmodernism, multicultural narrative, or feminist theory/feminist fiction.

5330. TOPICS IN CRITICISM (3-0). Studies in critical topics such as textual criticism, psychoanalytic criticism, philosophy and criticism, Renaissance poetics and literature, critical movements, or focus on a major theorist in criticism. May be repeated when content changes.

5331. TOPICS IN LANGUAGE OR DISCOURSE STUDIES (3-0). Concentration on historical and theoretical approaches to the study of language and the specific discursive practices of its users. May be repeated for credit when content changes.

5337. SEMINAR IN TEACHING LITERATURE (3-0). Study of recent scholarship in English Studies and other disciplines pertaining to the teaching of literature. Comparative analysis of methods and objectives for the teaching of literature. Course will include a practicum component in which students observe the teaching of experienced faculty, teach particular texts, design syllabi and write statements of teaching philosophy. The course is intended to prepare graduate students to teach literature courses at the university, college or community college level, and to provide a range of pedagogical models to enhance the skills of secondary school teachers.

5340. CRITICAL THEORY: THE MAJOR TRADITIONAL TEXTS (3-0). A study of literary and cultural theory and practice from the Greco-Roman period to the early 20th Century. May include such theorists as Plato, Aristotle, Horace, Longinus, Dante, Sidney, B. Jonson, Dryden, Pope, Johnson, Coleridge, Arnold, Richards, Eliot, and others.

5350. HISTORY OF RHETORIC I: CLASSICAL RHETORIC (3-0). A study of the theory and practice of Greco-Roman rhetoric from its pre-Socratic origins to the Second Sophistic. Attention will be given to major theorists, such as Gorgias, Protagoras, Plato, Aristotle, Isocrates, Hermagoras, Hermongenes, Cicero, Quintilian and the transitional figure of St. Augustine.

5351. HISTORY OF RHETORIC II: MEDIEVAL AND RENAISSANCE RHETORIC (3-0). A study of the theory and practice of western rhetoric from the early medieval period through the Renaissance. Attention will be given to major theorists, such as St. Augustine, Geoffrey of Vinsauf, Robert of Basevorn, Christine de Pizan, Desiderius Erasmus, Baldesar Castiglione, Juan Luis Vives, Sir Philip Sidney, Peter Ramus and Francis Bacon.

5352. HISTORY OF RHETORIC III: MODERN AND CONTEMPORARY RHETORIC (3-0). A study of the theory and practice of western rhetoric from the 18th century to the present. Attention will be given to major theorists, such as Whatley, Blair, Bain, Campbell, Spencer, Richards, Burke, Weaver, Toulmin, Perelman, Bitzer, Vatz, Harriman, Leff, Farrell, McGee, Gaonkar, Kinneavy, Scott, Crosswhite, Meyer, Gross, Miller, Fuller and Kent.

5355. STUDIES IN ENGLISH DISCOURSE (3-0). Analysis of English grammatical structures above the level of the clause, including the sentence, the paragraph, and the whole text; examination of the work of major discourse theorists Dik, Harris, Halliday, Longacre, Pike and van Dijk.

5356. COMPOSING PROCESSES (3-0). Study of research about writing processes and examination of the available methods of conducting research; special attention given to major researchers and theorists.

5357. READING PROCESSES (3-0). Contemporary theories of interpretation and empirical research into reading processes; special attention given to major researchers and theorists.

5358. WRITING ASSESSMENT, EVALUATION, AND RESPONSE (3-0). Study of the methods and ethics of assessing, evaluating, and responding to the writing of students individually or collectively.

5359. ARGUMENTATION THEORY (3-0). Emphasis on theories of argumentation and persuasion that further the rhetorical aims of convincing or achieving agreement through identification and consensus. Attention to classical and contemporary approaches to issue analysis, invention, audience analysis, building common ground, stasis theory, types of proofs and tests of validity, organizational strategies, and style. Special attention to argument on the Internet. Assignments may include constructing Web sites related to argument. Study of such

theorists as Aristotle, Perelman, Toulmin, Ong, K. Burke, Brockreide and Ehninger, Bitzer, Young, Becker and Pike, and others.

5360. CONTEMPORARY CRITICAL THEORY (3-0). Study of contemporary theories of interpretation, concentrating on one or more schools of critical and cultural theory may include, New Criticism, the Neo-Aristotelians, Marxist Critical Theory, Hermeneutics, psychoanalysis, Russian Formalism, semiotics, speech-act theory, phenomenology, structuralism, and post-structuralism. May be repeated when content changes.

5370. SCHOLARLY ARGUMENT (3-0). An introduction to the research for the writing of argumentative scholarly essays. Surveys research skills, materials, forms of scholarly argument, and involves the writing of a research-based essay.

5380. TEXTUAL THEORIES OF CULTURE (3-0). Study of the interpretations of culture yielded by the traditions of semiotics and hermeneutics and cultural studies may include works by the following: Lyotard, Foucault, Habermas, Derrida, Pierce, Barthes, Deleuze, Gadamer, Levi-Strauss, Butler, Haraway, and Hall.

5388. GTA PREPARATION (3-0).

5389. TOPICS IN TEACHING COMPOSITION (3-0). Seminar for investigating problems of and approaches to teaching composition. Special attention given to current compositional theorists. May be repeated when content changes.

5391. INDEPENDENT STUDY (3-0). Supervised independent study at the M.A. or Ph.D. level.

5398. THESIS (3-0). The graduate student must be registered for this course (a) when in consultation over the thesis with the supervisory committee, and (b) in the semester or term in which the Master of Arts degree will be conferred.

5698. THESIS (6-0). The graduate student must be registered for this course (a) when in consultation over the thesis with the supervisory committee, and (b) in the semester or term in which the Master of Arts degree will be conferred.

5998. THESIS (9-0). The graduate student must be registered for this course (a) when in consultation over the thesis with the supervisory committee, and (b) in the semester or term in which the Master of Arts degree will be conferred.

6191. INDEPENDENT STUDY (1-0). Independent study at the M.A. or Ph.D. level. May be repeated as needed. Prerequisite: permission of instructor.

6329. TOPICS AND THEMES IN COMPARATIVE LITERATURE (3-0). The study of a theme or topic, such as primitivism, utopianism, representations of the unconscious, or the quest, within different literary traditions. May be repeated as content changes.

6330. GENRE STUDIES IN BRITISH LITERATURE (3-0). Intensive study of a genre in any period(s) of British Literature; may focus on autobiography, history of the novel, Restoration and eighteenth-century drama, nineteenth-century British fiction, or other. May be repeated when course content changes.

6332. PERIODS AND MOVEMENTS IN COMPARATIVE LITERATURE (3-0). The study of particular time periods such as the Renaissance or the 19th century, or of literary and cultural movements such as realism, Surrealism, Romanticism, or Modernism, across different literatures. May be repeated as course content changes.

6333. GENRES IN COMPARATIVE LITERATURE (3-0). Theory of literary forms or types and the conventions they embody. May focus on the epic, the novel, lyric poetry, autobiography, drama, or magical realism, across different literary traditions. May be repeated as course content changes.

6335. TOPICS IN ENGLISH LITERATURE (3-0). Focus on writers or issues in literature written in English, including colonial and postcolonial literatures. May include poetry, drama, fiction, or nonfiction. May be repeated when content changes.

6339. TOPICS IN AMERICAN LITERATURE (3-0). Themes or issues not bound by particular historical periods, for example, women writers, canon formation, American Indian literature, African-American literature, utopian literature, cultural studies. May be repeated when content changes.

6340. METACRITICAL THEORY (3-0). A study of theories of literature from the point of view of their systems-theoretical character. Focuses on the writing of selected metatheorists such as Barbour, Braithwaite, Bruss, Harr, Lakotos, Popper, Rescher, and others, on questions of the genesis, nature, function, validity, and potential of literary theory.

6350. TOPICS IN THE HISTORY AND THEORY OF RHETORIC (3-0). An intensive study of specific problems or issues in classical, medieval, Renaissance, modern, or contemporary rhetoric, (e.g., civic functions of rhetoric, logic and rhetoric, rhetoric of science, theories of invention), especially those that involve the connections and collisions between rhetoric and other intellectual traditions (e.g., critical theory, cultural studies, feminist theory, history, literary studies, non-western rhetoric, philosophy). May focus on the work of a major theorist. May be repeated for credit when content changes.

6351. TOPICS IN COMPOSITION STUDIES (3-0). An intensive study of specific problems or issues in contemporary composition studies (e.g., authorship and intellectual property, computers and composition, the ideologies of writing instruction, the role of empirical research, service learning), especially those that involve connections and collisions between composition studies and other intellectual traditions (e.g., cognitive science, critical theory, cultural studies, feminist theory, hermeneutics, history, linguistics, literary study, rhetoric, philosophy, psychology, sociology). May focus on the work of a major researcher or theorist. May be repeated for credit when content changes.

6360. TOPICS IN FEMINIST CRITICISM (3-0). Study of interdisciplinary feminist theories of language, power, knowledge, and culture. Course may focus on Marxist feminism, postmodern feminism, feminist cultural studies, or other topics. Course may include such theorists as Wollstonecraft, Woolf, Beauvoir, Irigaray, Spillers, Anzaldua, Haraway, Butler, or Cornell.

6391. GRADUATE READINGS (3-0). Supervised reading for the Ph.D. exam.

6399. DISSERTATION (3-0). The graduate student must be registered for this course (a) when in consultation over the dissertation with the supervisory committee, and (b) in the semester or term in which the Ph.D. will be conferred. A minimum of 9 hours of dissertation credit is required for the Ph.D. Graduate teaching assistants must take 6699. 6999 must be taken during the final semester of the Ph.D.

6699. DISSERTATION (6-0). The graduate student must be registered for this course (a) when in consultation over the dissertation with the supervisory committee, and (b) in the semester or term in which the Ph.D. will be conferred. A minimum of 9 hours of dissertation credit is required for the Ph.D. Graduate teaching assistants must take 6699. 6999 must be taken during the final semester of the Ph.D.

6999. DISSERTATION (9-0). The graduate student must be registered for this course (a) when in consultation over the dissertation with the supervisory committee, and (b) in the semester or term in which the Ph.D. will be conferred. A minimum of 9 hours of dissertation credit is required for the Ph.D. Graduate teaching assistants must take 6699. 6999 must be taken during the final semester of the Ph.D.

Department of History

www.uta.edu/history

Areas of Study and Degrees
History
M.A., Ph.D.
Archival Administration
Certificate

Master's Degree Plans
Thesis and Non-Thesis

Doctoral Degree Plan
Dissertation

Chair
Robert B. Fairbanks
202 University Hall
817.272.2861

Graduate Advisors
Stephen Maizlish (M.A. Program)
Thomas Adam (Ph.D. Program)
201 University Hall
817.272.2861
Fax: 817.272.2852
history@uta.edu

Graduate Faculty
Professors
Fairbanks, Francaviglia, Green, Kyle, Palmer, Philp, Reinhartz, Richmond, Rodnitzky, Saxon

Associate Professors
Adam, Cawthon, Cole, Garrigus, Goldberg, Haynes, Jalloh, Maizlish, Morris, Narrett, Reinhardt, Treviño

Assistant Professors
Davis-Secord

Professor Emeritus
Lackner

Objectives

Graduate study in history seeks not only to train students in historical methods and analysis but also to nurture in them a sense of the excitement and relevance of studying the past. Exploring the historical diversity of human experience broadens and deepens our understanding of both the past and the contemporary world. Students who complete graduate studies in history pursue careers in teaching, research and archival or museum administration, as well as in government and business.

The Master's Degree Program offers students graduate history training in either U.S. history or the history of Europe, Africa and Latin America. In the flexible Master's degree curriculum, apart from two required courses early in the program, students tailor their course of study to meet individual interests and career objectives. Students choose either Thesis or Non-Thesis programs. Coursework and internships in Archival Administration certification and/or Public History are also available as part of the Master's degree program.

The Doctoral Degree Program in Transatlantic History offers students comparative study of the historical development of peoples on the continents bordering the Atlantic Ocean. This exciting Ph.D. program is part of recent developments within the discipline of history that broaden the study of the past, transcend national histories, and contribute to a new transnational and comparative perspective. Utilizing specific research resources in the UT Arlington Libraries, the Ph.D. program in Transatlantic History (1492 to the present) offers a structured and focused curriculum of both required and elective courses. Prerequisite: B.A. or M.A. degree in history.

Admission Standards

In compliance with HB 1641, the History Department does not assign a specific weight to any one factor being considered, and does not use standardized tests (i.e., the GRE) in the admissions or competitive fellowship or scholarship process as the sole criterion for consideration or as the primary criterion to end consideration of an applicant to either the M.A. or Ph.D. program. However, the GRE is required and used as a criterion, without specific weight, in the Department's evaluation of candidates for admission to programs at each of three levels: Unconditional, Provisional, and Probationary Admission.

The Department wishes to be as thorough and fair as possible in evaluating applicants for admission. It recognizes that some applicants may appear to be stronger according to some criteria than according to other criteria. When an applicant does not completely meet the minimum expectations for Unconditional Admission, the Department may consider the applicant for possible Provisional or Probationary Admission. When the applicant is not granted any of the three levels of admission, the decision may be deferred or the application is denied. We do not wish to exclude a qualified and potentially successful candidate who perhaps has approached but not met all the criteria completely. However, we do not wish to admit candidates who, based on the criteria, are deemed to have a poor chance of successfully completing the graduate program.

M.A. Program
Unconditional Admission

The criteria for admission below are used, without specific weights, as positive indicators of potential success in the program. All four criteria for unconditional admission must be met in order to receive unconditional admission.

- Undergraduate GPA of 3.0 (as calculated by the Graduate School) in the last 60 credit hours in the course of completing a B.A. degree in History (or an appropriate other field) from an accredited institution (verified by official transcripts from each college or university previously attended sent directly from the registrar of that institution to Graduate Admissions).
- A written statement (500 words) explaining the applicant's reasons for graduate study in History.
- Three letters of recommendation (from faculty if possible) mailed directly from the recommenders to the History Graduate Advisor.
- A minimum score of 500 on the verbal section and a minimum score of 4 on the analytical writing section of the GRE aptitude test (verified by official GRE scores sent to Graduate Admissions).

Provisional Admission

An applicant unable to supply all required documentation (e.g. GRE scores have not yet arrived) prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission. Provisionally admitted students must adequately satisfy any incomplete documentation by the end of the semester in which they are admitted. If the applicant fails to do so, the Department may then reclassify the applicant as Probationary, defer the decision, or ask the candidate to leave the program.

Probationary Admission

An applicant whose performance, according to the criteria, approximates but does not meet minimum admission standards may be granted Probationary Admission subject to one or both of the following conditions:

- The candidate must earn no grade lower than a B in his/her first 12 semester hours of graduate work taken at UT Arlington.
- Candidates without adequate appropriate preparation in the discipline of History may be required to complete a certain number of "leveling" courses (i.e., make-up coursework) while in the program.

Deferral or Denial

If two or more of the criteria have not been met satisfactorily, the applicant will not be admitted on any of the three levels above but will receive deferral or denial. A deferred decision may be granted when a file is incomplete or when a denied decision is not appropriate.

M.A. Fellowship Standards

Fellowships, when available, will be awarded on a competitive basis. Nominees for the Graduate School Master's Fellowship in History will be selected based on the following criteria:

- Candidates must be new students entering in the fall semester, with a minimum of 6 hours of enrollment in both long semesters to retain their fellowships.
- The minimum undergraduate GPA requirement is 3.0, as calculated by the Graduate School, plus a GPA of 3.0 for any graduate credit hours.
- Transcript of a completed bachelor's degree in History (or appropriate related field) from an accredited institution.
- Three letters of recommendation (from faculty if possible).
- A written statement (500 words) explaining the applicant's reasons for graduate study in History.

Ph.D. Program

Unconditional Admission

The criteria for admission below are used, without specific weight, as positive indicators of potential success in the program. All criteria must be met in order to receive consideration for unconditional admission.

- A prior academic degree (either B.A. or M.A.) in History from an accredited institution (verified by transcripts from each college or university previously attended sent directly from the registrar of that institution to Graduate Admissions). If the prospective candidate has no prior degree in History, the doctoral advisor will refer the applicant to the advisor of UT Arlington's M.A. program in History.
- A graduate GPA of 3.5 (as calculated by the Graduate School) in the course of completing an M.A. degree in History or an appropriate other field from an accredited institution (verified by official transcripts from each college or university previously attended sent directly from the registrar of that institution to Graduate Admissions).
- An academic writing sample (e.g., research essay, thesis chapter) from a previous course assignment.
- Three letters of recommendation (from faculty if possible) mailed directly from the recommenders to the History Ph.D. Advisor.
- A minimum score of 550 on the verbal section and a minimum score of 5 on the analytical writing section of the GRE aptitude test (verified by official GRE scores sent to Graduate Admissions).

Provisional Admission

An applicant unable to supply all required documentation (e.g., GRE scores) prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission. Provisionally admitted students must adequately satisfy any incomplete documentation by the end of the semester in which they are admitted. If the applicant fails to do so, the Department may then reclassify the applicant as Probationary, defer the decision, or ask the candidate to leave the program.

Probationary Admission

An applicant whose credentials approximate but do not meet minimum admission standards, may be granted Probationary Admission subject to the condition that the candidate must earn no grade lower than a B in his/her first 12 semester hours of graduate work taken at UT Arlington.

Deferral or Denial

If two or more of the criteria have not been met satisfactorily, the applicant will not be admitted on any of the three levels above but will receive deferral or denial. A deferred decision may be granted when a file is incomplete or when a denied decision is not appropriate.

Application Deadline

The Ph.D. admissions committee will begin its evaluation of completed applications on February 2 and will continue to meet periodically until the Graduate School deadline of June 15. Decisions concerning fellowships and assistantships will be made beginning March 15 and will continue thereafter depending on availability.

Ph.D. Fellowship Standards

Fellowships, when available, will be awarded on a competitive basis. The criteria for Liberal Arts Special (Transatlantic) Doctoral Fellowships in History are:

- Candidates must be new students entering in the fall semester, with a minimum of 6 hours of enrollment in both long semesters to retain their fellowships.
- Graduate GPA of 3.5 (as calculated by the Graduate School) in the course of completing an M.A. degree in History (or an appropriate other field) from an accredited institution, plus a GPA of 3.0 in any additional graduate hours.
- Three letters of recommendation (from faculty if possible).
- An academic writing sample (e.g., research essay, thesis chapter) from a previous course assignment.

M.A. Degree Requirements

Courses taken toward a master's degree should fit into a unified program aimed at providing students with both a comprehensive background and a depth of understanding in a major field in either U.S. History or the History of Europe, Africa and Latin America. All students are required to take HIST 5339 Historical Theory and Methodology and the Issues & Interpretations course corresponding to their major field (either HIST 5340 or 5341). All students must take a minimum of six hours in both the Colloquium and the Seminar courses. Master's students are eligible to take courses at the 6000 level as well as 5000 level, subject to any particular course prerequisites. Students must consult with the Graduate Advisor to determine their program.

Competency in one foreign language is required to obtain the Master's degree. This may be demonstrated by four semesters of credit in an approved language or by successful completion of an examination administered by the Department of Foreign Languages or by the History Department.

The Thesis degree plan is designed for students who wish to research and write a substantial, original work on a historical topic of personal interest. The plan requires completion of 30 credit hours (24 hours of coursework, plus 6 hours of thesis preparation). With the approval of the Graduate Advisor, thesis students may have a minor of as many as six hours of graduate and/or advanced undergraduate courses in a discipline other than history. A maximum of six hours of advanced undergraduate history coursework may be taken for graduate credit. Thesis candidates should consult with the Graduate Advisor to form their thesis faculty committee, which consists of one supervising professor and two other professors.

The Non-Thesis degree plan requires completion of 36 credit hours of coursework. In the final semester, the non-thesis students are required to take HIST 5395, a course that prepares them for the written and oral comprehensive examination. With the approval of the Graduate Advisor, non-thesis students may have a minor of as many as nine hours of graduate and/or advanced undergraduate courses in a discipline other than history. A maximum of nine hours of advanced undergraduate coursework may be taken for graduate credit. A comprehensive examination (written and oral), over specific areas of concentration within the major field, is required for the degree; these areas will be defined by students in consultation with the Graduate Advisor and their non-thesis faculty committee, which consists of one supervising professor and two other professors.

Archival Administration and Public History

These studies involve application of historical knowledge and methodology in non-academic settings such as private businesses or public historical agencies (e.g., archives, museums, preservation societies).

Students desiring a certificate of archival administration as part of the Master of Arts in History degree must take HIST 5339 and HIST 5340 or HIST 5341 and HIST 5395, and enroll in 15 hours of other courses in either U.S. history or the history of Europe, Africa and Latin America. In addition, they must take HIST 5342 and HIST 5343, plus an additional six hours of internship, HIST 5644. Students already holding a M.A. or Ph.D. degree in history or a related field, as well as students enrolled in graduate programs other than history, who desire only a certificate in archival administration should consult the Graduate Advisor.

Students desiring public history as an area of study as part of the Master of Arts in History degree must take HIST 5339, HIST 5340 or HIST 5341, and HIST 5395, and also enroll in 9 hours of content courses in either U.S. history or the history of Europe, Africa and Latin America. At least 3 hours must be in both colloquium and seminar courses. In addition, students must take the following required 12 hours HIST 5342, HIST 5343, HIST 5345, and HIST 5348, plus an additional six hours of internship (HIST 5644). Students electing to complete an internship in archival management will also earn the certificate in archival administration (see above).

Students interested in either archival administration or public history as an area of study are encouraged to consult the Graduate Advisor to discuss a program of work.

Master of Education in Teaching (M.Ed.T.)

History may be chosen as an appropriate academic specialization or teaching field for students enrolled in the Master of Education in Teaching Degree Program. The History Department offers courses that qualify as an academic area or teaching field for elementary and secondary teachers. HIST 5340 and/or HIST 5341 are especially recommended for students in the M.Ed.T. program, and for others who wish to broaden their historical knowledge for classroom teaching. See Master of Education in Teaching Degree Program.

Ph.D. Degree Requirements

The doctoral program consists of 39 credit hours: 30 hours of coursework and 9 hours of dissertation. A total of 18 hours of the 30-hour total of coursework is on required methodological and transatlantic subjects. Of the remaining 12 hours of elective coursework, a minimum of 3 hours and a maximum of 6 hours are to be taken in a department other than history.

The Ph.D. Program in Transatlantic History has as its goal the solid grounding of graduate students in the history of the development, contact, and interaction between peoples of the continents bordering on the Atlantic Ocean. In order to achieve this goal of the comparative study of the interrelations of Europe, Africa, and the Americas, North and South, students enroll in a sequenced curriculum that offers coursework in discovery, exploration, and the history of cartography; and migrations, colonization, and comparative frontiers. Readings (colloquium) courses in specific areas are followed by research (seminar) courses in that area. Certain doctoral courses HIST 6301, 6302, 6321, 6322 may be repeated for credit when the instructor or subject changes.

During the first semester (Fall of Year I), students take three required courses. HIST 5339, Historical Theory and Methodology, trains students in basic research techniques, theories, and methodologies. HIST 6338, Issues in Transatlantic History, introduces key concepts and important issues in Transatlantic History from 1492 to the present. A third course, HIST 6301, is a colloquium on Transat-

lantic Exploration, Discovery and the History of Cartography. This course allows students to study in more depth subjects encountered in the overview course, HIST 6338.

(Students who hold the M.A. degree from UT Arlington, and who have already taken HIST 5339 as part of that program's requirements, should take an elective course in place of repeating this course.)

During their second semester (Spring of Year I), students take two required courses and one elective course. The two required courses are HIST 6302 and 6321. The colloquium course, HIST 6302, Transatlantic Migrations, Colonization, and Comparative Frontiers, enables students to focus more specifically in these subject areas, which were introduced earlier in HIST 6338. In the other required course, HIST 6321, Seminar on Transatlantic Exploration, Discovery, and the History of Cartography, students conduct primary source research on subjects studied in HIST 6301, which students will have taken in the previous semester. The third course during this semester is the student's first elective course. (On Electives, see below.)

The availability of Summer courses may affect the students' remaining schedules.

During their third semester (usually Fall of Year II), students take one required course and two electives. The required course is HIST 6322, Seminar in Transatlantic Migrations, Colonization and Comparative Frontiers, a course in which students conduct primary source research in areas previously studied in HIST 6302. In addition, students enroll in two electives (see Electives).

During their fourth semester (usually Spring of Year II), students take one final elective course. Students may also enroll in an individual study course (HIST 6190, 6390, 6690 or 6990) that prepares them for the Comprehensive Examination (see Comprehensive Examination). Students are required to pass this examination before proceeding to the dissertation.

Electives

Students are reminded of the requirement of 3 hours minimum and 6 hours maximum of elective courses to be taken in a department(s) other than history. These 3-6 hours may be taken in any semester beyond the Fall of Year I. Since, overall, the Transatlantic History doctoral program requires a total of 12 hours of electives, the student enrolls in either 3 hours in non-history department courses and 9 hours in history courses, or 6 hours in non-history courses and 6 hours in history courses. The student may enroll in either 5000 or 6000 level history courses as electives.

Elective courses in the Transatlantic History Ph.D. program are defined as either inside electives, non-required history department courses, or outside electives, courses in a department other than history. With the approval of the Graduate Advisor, students may select outside electives from any graduate course in the departments of English, Foreign Languages, Political Science, and Sociology/Anthropology. A course or courses in another department must have the approval of the Graduate Advisor. Special note on inside electives: All 5000 and 6000 level history courses except HIST 5339 may be repeated for credit when the subject or instructor changes.

It is understood that both outside and inside electives should be courses that will contribute to the transatlantic focus of the student's body of work.

Foreign Language

If the student has not already fulfilled the foreign language requirement before entering the doctoral program, he/she is expected to use the first two years in the program to satisfy the foreign language requirement. The student is expected to choose a language that will be required to work on the PhD topic of his/her choice. Each student is expected to have a solid reading knowledge in at least one transatlantic language (languages of the European and African peoples other than English). The language proficiency can be demonstrated in three different ways:

- If the student has not already taken four semesters (from an accredited university) in a single foreign language with at least a B before being admitted to the PhD program (within 10 years prior to admission), the student needs to complete four semesters in one foreign language with at least a grade of B prior to taking the Comprehensive Exam.
- Demonstrating proficiency in a foreign language by taking the CLEP test and scoring 71-80 in German, 68-80 in French, and 67-80 in Spanish.
- Taking the Reading Comprehension Exercise by an appropriate faculty member in which the student during one semester must read one monograph (about 200-300 pages) in a language other than English and submit a five-seven page summary in English, which must include up to three pages of direct translation.

The language requirement must be satisfied before the student can take the Comprehensive Exam. For the student at the dissertation stage, the candidate's doctoral committee may require that the student demonstrates competency in a second foreign language in the same fashion as the first foreign language if that second language is judged essential for the student's dissertation research.

Comprehensive Examination

After the student has completed all or most of the 30 hours of coursework (18 hours of required core courses and 12 hours of electives) and satisfied the language requirement, he/she, upon consultation with the Ph.D. Advisor and the Comprehensive Exam Committee, should begin preparing for the Ph.D. Comprehensive Exam. It is strongly recommended that students wait until they have completed all 30 hours of course work.

Only after the student has the approval of the Ph.D. Advisor, he/she may arrange the date of the exam in consultation with all committee members. Only then may the Request for the Comprehensive Examination form be filed with the graduate school. Please make sure to file the Request for the Comprehensive Examination in the first four weeks of the semester. (See the graduate program assistant in the History Department office to file the form.)

The Comprehensive Examination is meant to test the student's knowledge in at least three broad areas of study and is designed to determine whether the student is prepared to teach in those areas. The scope of the Comprehensive Examination should be broader than the dissertation topic. In consultation with the three principle committee members, the student must develop reading lists of key primary and secondary materials for each of the three areas of specialization.

The written portion of the exam will be taken over a period of three consecutive days, seven hours each day, from 9:00 a.m. to 4:00 p.m. The students will be examined over one area each day. Beginning with the first morning, the student should report to the graduate program assistant in the History Department office, who will issue the student the relevant question(s) for that day's examination. Students may use a personal computer available in the department to take their examination. They may not use texts or notes during the exam. Chairs should ensure that time-limits for individual parts of the examination are observed.

After the written exams are completed and the committee has read all three parts, students will take the oral exam (within a week of the written exam). Students must take both the written and oral exams or they will automatically fail the comprehensive exam. After the oral exam is over, the committee members will discuss the exam as a whole (written and oral). Then the committee will decided on one of the four options listed below.

A) Passed, approval and recommendation to begin dissertation research under the supervision of the committee chair.

B) Passed, approval to remain in the program upon meeting certain specified additional requirements.

C) Failed, with permission to retake the examination after a certain period as specified by the examining committee.

D) Failed: Recommendation not to continue in the program.

Students are required to pass this examination before they proceed to the dissertation (ABD) phase of the program.

Dissertation

The final stage in the student's progression to the doctoral degree in history is the dissertation. With the advice of the Graduate Advisor, students work with their supervising professor and faculty committee to complete and file a Dissertation Prospectus.

The dissertation itself must be on a transatlantic subject approved by the Graduate Advisor and the student's faculty committee. The dissertation must be the product of original research based on the critical examination and evaluation of primary sources as well as appropriate secondary materials and interpretations. After completion of the dissertation, students will defend their work in an oral examination.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

History (HIST)

5191. INDEPENDENT STUDY (1-0). For masters students pursuing independent research or study under the supervision of a faculty member.

5291. INDEPENDENT STUDY (2-0). For master's students pursuing independent research or study under the supervision of a faculty member.

5301. COLLOQUIUM IN 19TH CENTURY U.S. HISTORY (3-0). An examination of the historical literature and issues in 19th Century United States history. The specific literature and issues examined will vary with the instructor.

5302. COLLOQUIUM IN 20TH CENTURY U.S. HISTORY (3-0). An examination of the historical literature and issues in 20th Century United States history. The specific literature and issues examined will vary with the instructor.

5304. COLLOQUIUM IN REGIONAL/TOPICAL U.S. HISTORY (3-0). An examination of the historical literature and issues pertaining to a region or a major topic in the history of the U.S. The specific literature and issues examined will vary with the instructor.

5310. COLLOQUIUM IN ANCIENT AND MEDIEVAL HISTORY (3-0). An examination of the historical literature and issues in ancient and medieval history. The specific literature and issues examined will vary with the instructor.

5311. COLLOQUIUM IN PRE-1800 EUROPEAN/LATIN AMERICAN/AFRICAN HISTORY (3-0). An examination of the historical literature and issues in Pre-1800 European/Latin American/African history. The specific literature and issues examined will vary with the instructor.

5312. COLLOQUIUM IN POST-1800 EUROPEAN/LATIN AMERICAN/AFRICAN HISTORY (3-0). An examination of the historical literature and issues in Post-1800 European/Latin American/African history. The specific literature and issues examined will vary with the instructor.

5313. COLLOQUIUM IN REGIONAL/TOPICAL EUROPEAN/LATIN AMERICAN/AFRICAN HISTORY (3-0). An examination of the historical literature and issues pertaining to a region or a major topic in European/Latin American/African history. The specific literature and issues examined will vary with the instructor.

5321. SEMINAR IN 19TH CENTURY U.S. HISTORY (3-0). A detailed investigation of a major aspect of 19th Century United States history, involving original research and use of historical resources. The particular aspect investigated will vary with the instructor.

5322. SEMINAR IN 20TH CENTURY U.S. HISTORY (3-0). A detailed investigation of a major aspect of 20th Century United States history, involving original research and use of historical resources. The particular aspect investigated will vary with the instructor.

5324. SEMINAR IN REGIONAL/TOPICAL U.S. HISTORY (3-0). A detailed investigation of a major aspect of a region or a major topic in the history of the U.S., involving research and use of historical resources. The particular aspect investigated will vary with the instructor.

5330. SEMINAR IN ANCIENT AND MEDIEVAL HISTORY (3-0). A detailed investigation of a major aspect of ancient and medieval history, involving original research and use of historical resources. The particular aspect investigated will vary with the instructor.

5331. SEMINAR IN PRE-1800 EUROPEAN/LATIN AMERICAN/AFRICAN HISTORY (3-0). A detailed investigation of a major aspect of Pre-1800 European/Latin American/African history, involving original research and use of historical resources. The particular aspect investigated will vary with the instructor.

5332. SEMINAR IN POST-1800 EUROPEAN/LATIN AMERICAN/AFRICAN HISTORY (3-0). A detailed investigation of a major aspect of Post-1800 European/Latin American/African history, involving original research and use of historical resources. The particular aspect investigated will vary with the instructor.

5333. SEMINAR IN REGIONAL/TOPICAL EUROPEAN/LATIN AMERICAN/AFRICAN HISTORY (3-0). A detailed investigation of a region or a major topic in European/Latin American/African history, involving research and use of historical resources. The particular aspect investigated will vary with the instructor.

5339. HISTORICAL THEORY AND METHODOLOGY (3-0). An examination of theories of historical knowledge, the history of the discipline, various historical methodologies, and research techniques. Required for all history M.A. and Ph.D. students.

5340. ISSUES AND INTERPRETATIONS IN U.S. HISTORY (3-0). A critical survey of U.S. historical scholarship from colonial times to the present. Required for all history M.A. students who are emphasizing U.S. history.

5341. ISSUES AND INTERPRETATIONS IN EUROPEAN/LATIN AMERICAN/AFRICAN HISTORY (3-0). A critical survey of European/Latin American/African historical scholarship from ancient times to the present. Required for all history M.A. students who are emphasizing European/Latin American/African history.

5342. PRINCIPLES OF ARCHIVES AND MUSEUMS I (3-0). The historical evolution of archival science, emphasizing the development of the archives profession, archival principles and theories, appraisal and acquisition techniques, the laws affecting archives, programming and outreach, automation, conservation and preservation, and administration of collections.

5343. PRINCIPLES OF ARCHIVES AND MUSEUMS II (3-0). Training in the methods and techniques of processing archives and historical manuscripts. Focuses on the day-to-day responsibilities of archivists and curators, such as appraising, accessioning, arranging, and describing collections.

5345. INTRODUCTION TO PUBLIC HISTORY (3-0). An overview of the field of public history focusing on public historians, their work, their relationship to academic historians, their accomplishments, and the ethical principles under which they operate.

5348. TOPICS IN PUBLIC HISTORY (3-0). A detailed examination of some aspect of public history (e.g. historical editing, oral history, historic preservation). The particular topic will vary with the instructor.

5349. TOPICS IN WORLD CIVILIZATION (3-0). Examines subjects of immediate interest relating to world civilization not covered in other existing courses.

5350. HISTORY OF CARTOGRAPHY (3-0). A history of maps and their making and cartographic documentation as a source for understanding historical development. An aspect of the history of science and technology and the history of discovery and exploration.

5390. DIRECTED STUDIES FOR MASTERS STUDENTS (3-0). Directed study for masters students who have arranged to pursue specific topics of historical inquiry.

5391. INDEPENDENT STUDY (3-0). For masters students pursuing independent research or study under the supervision of a faculty member.

5392. HISTORICAL PERSPECTIVES ON THE HUMANITIES (3-0). An historical inquiry into problems and issues of contemporary relevance in the humanistic disciplines. The particular problems and issues investigated will vary with the instructor.

5395. NON-THESIS CAPSTONE (3-0). Readings in the non-thesis student's final semester, directed by the three-person faculty committee supervising the student's program of work. Required of all non-thesis history M.A. students.

5398. THESIS (3-0). For thesis history M.A. students.

5644. ARCHIVAL/PUBLIC HISTORY INTERNSHIP (6-0). Work experience for either Archival or Public History students. Archival Certification: Hands-on experience in archives, records centers, or historical manuscripts repositories. Public History: Placement in a history-oriented position in a private or public agency or organization in the community.

5655. PUBLIC HISTORY INTERNSHIP (6-0).

5691. INDEPENDENT STUDY (6-0). For master's students pursuing independent research or study under the supervision of a faculty member.

5698. THESIS (6-0). For thesis history M.A. students.

5998. THESIS (9-0).

6190. DIRECTED STUDIES FOR PhD STUDENTS (1-0). Directed study for Ph.D. students who have arranged to pursue specific topics of historical inquiry.

6191. INDEPENDENT STUDY (1-0).

6301. EXPLORATION AND CARTOGRAPHY (3-0). This colloquium introduces students to the study of the period of European exploration and the mapping of the New World. Required for all history Ph.D. students.

6302. MIGRATION AND SETTLEMENT (3-0). This colloquium introduces students to the study of migration and subsequent settlement of people from Africa and Europe in North and South America from the fifteenth century to the present time. Required for all history Ph.D. students.

6303. REVOLUTIONS AND TRANSFORMATIONS (3-0). This colloquium introduces student to the study of the political, economic and cultural revolutions and transformations that occurred within the transatlantic world. Required for all history Ph.D. students.

6304. IDENTITIES AND ENCOUNTERS (3-0). This colloquium introduces students to the study of cultural and social contacts between people and societies within the transatlantic world as well as the construction of identities that resulted from these contacts. Required for all history Ph.D. students.

6321. TRANSATLANTIC HISTORY TO 1800 (3-0). This seminar allows students to research topics within the filed of transatlantic history from its early beginnings in the tenth century to 1800. Required for all history Ph.D. students.

6322. TRANSATLANTIC HISTORY POST 1800 (3-0). This seminar allows students to research topics within the field of transatlantic history from 1800 to the present time. Required for all history Ph.D. students.

6337. INTRODUCTION TO TRANSATLANTIC HISTORY TO 1800 (3-0). This course introduces students to the relevant historiography of pre-1800 transatlantic history. Required for all history Ph.D. students.

6338. INTRODUCTION TO TRANSATLANTIC HISTORY POST 1800 (3-0). This course introduces students to the relevant historiography of post-1800 transatlantic history. Required for all history Ph.D. students.

6390. DIRECTED STUDIES FOR Ph.D. STUDENTS (3-0). Directed study for Ph.D. students who have arranged to pursue specific topics of historical inquiry.

6391. INDEPENDENT STUDY (3-0). For history Ph.D. students.

6399. DISSERTATION (3-0).

6690. DIRECTED STUDIES FOR Ph.D. STUDENTS (6-0). Directed study for Ph.D. students who have arranged to pursue specific topics of historical inquiry.

6691. INDEPENDENT STUDY (6-0). For history Ph.D. students.

6699. DISSERTATION (6-0).

6990. DIRECTED STUDIES FOR PhD STUDENTS (9-0).Directed study for Ph.D. students who have arranged to pursue specific topics of historical inquiry.

6991. INDEPENDENT STUDY (9-0). For history Ph.D. students.

6999. DISSERTATION (9-0).

Program in Humanities

www.uta.edu/huma/gradhuma

Area of Study and Degrees
Humanities
M.A.

Master's Degree Plans
Thesis and Non-Thesis

Director
Susan J. Hekman
320 Carlisle Hall
817.272.2389

Graduate Faculty
The Graduate Faculty of the College of Liberal Arts

Objective

The Graduate Humanities Program offers a course of study designed to instill understanding across the spectrum of fields traditionally identified as the Humanities, the study of humankind and of the cultures it has created. The Humanities includes history; philosophy; languages; linguistics; literature; anthropology; the history, theory and criticism of the fine arts; ethics; comparative religion; social and political theory; and those aspects of the social sciences employing historical or philosophical approaches or methodologies that subordinate quantitative procedures to an interpretive and qualitative evaluation of their subject matters. The program combines a strong foundation in the concepts and methods shared by the humanities with intensive study in an area of concentration that synthesizes or integrates two or more disciplines. It is not suited for those wishing to pursue a traditional disciplinary degree, because its views, subject matter and methods transcend those normally allowed in a single discipline. Study in the Humanities allows integration and forging connections across disciplinary boundaries. Coursework and examinations must reflect the methods and perspectives of the Humanities.

The foundation of the program is a series of courses, taken at the outset of study, whose purpose is to enhance a student's ability to view complex issues from a variety of perspectives. Drawing on classical and contemporary approaches, the foundation courses present and illustrate the basic concepts, the theoretical frameworks, and the methods of the humanities.

The Master's Program in Graduate Humanities, after the completion of foundation courses, applies the methods and perspectives of the Humanities foundation in integrating the subject areas of concentration. Graduates of the program utilize these abilities in teaching, research, translation, the ministry, government service, and private non-profit organizations. Each student's course of study is planned individually and provides in-depth training in a specialization within the context of the Humanities' traditional focus on human goals, needs, and values.

Admission Requirements

Potential students must apply for admission through, and supply all information and meet all admission standards required by, the Graduate School. In addition, the following information will be considered in determining admission status into the Graduate Humanities Program:

1. a GPA no lower than 3.0 for all undergraduate work
2. GRE scores falling in the range of or surpassing those submitted by typical students in our program: Verbal - 540-610; Quantitative - 540-640; Analytic - 580-640 or Analytic Writing - 3-5.
3. three satisfactory letters of recommendation, as judged by the graduate advisor
4. a satisfactory written summary of degree objectives, as judged by the graduate advisor

Unconditional Admission

For unconditional admission students must meet all four requirements.

Probationary Admission

Students not meeting all of the requirements may still be considered for probationary admission; no single criterion will end consideration of an applicant. Students entering the program under probationary status will be granted unconditional admission only after completing 12 hours of graduate courses, approved by the graduate advisor, earning no grade below B.

Provisional Admission

An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission.

Admission Deferral and Denial

Students will be denied admission or admission will be deferred if they perform poorly on all of the above criteria. A deferred decision may be granted when a file is incomplete or when a denied decision is not appropriate.

Fellowships

- Fellowships, when available, will be awarded on a competitive basis. Nominees for the Graduate School Master's Fellowship in Humanities will be selected based on the following criteria:
- Candidates must be new students entering in the fall semester, with a minimum of 6 hours of enrollment in both long semesters to retain their fellowships.
- The minimum undergraduate GPA requirement is 3.00, as calculated by the Graduate School, plus a GPA of 3.0 for any graduate hours.
- Transcript of a completed bachelor's degree from an accredited institution.
- Three letters of recommendation.
- A written statement explaining the applicant's reasons for graduate study in Humanities.

Degree Requirements

The basic general admission and degree requirements are those of the Graduate School, as stated in this catalog. A Student Handbook is provided each student in the Graduate Humanities Program. Students are responsible for all information regarding rules, policies, and procedures as defined in the student handbook. In addition, all MA students must fulfill the following requirements:

Foundation requirement—Three courses are required. All students must complete the Conceptual Bases of the Humanities (HUMA 5300) within the first two semesters in the program. Students must also take two of the remaining four foundation courses: HUMA 5303, HUMA 5304, HUMA 5306, HUMA 5307.

Foreign Language requirement—students must demonstrate the ability to use one foreign language as a research tool in the humanities by means of a translation or other written exercise.

Scope requirement—for the remaining hours of coursework, students will devise an integrated program of multidisciplinary study drawing on more than one disciplinary prefix within the humanities disciplines with the advice of their committees. No more than 15 hours may be taken in any one discipline.

Master of Arts in the Humanities

Students may choose a thesis or non-thesis option. The thesis option requires 30 credit hours, 24 hours of course work plus 6 hours of thesis preparation. Thesis students must pass an oral defense of the thesis upon its completion. The non-thesis option requires 36 hours of course work and the preparation of a qualifying paper. Non-thesis students must pass a comprehensive examination at the end of their program of study.

Humanities (HUMA)

5300. CONCEPTUAL BASES OF THE HUMANITIES (3-0). Introduces students to fundamental concepts, methods, and issues central to the humanities. Particular attention will be given to a variety of epistemological approaches in humanistic inquiry, to theories of interpretation as applied to cultural constructs, and to recent issues and problems in the humanities. Required of all MA candidates in the humanities.

5303. APPROACHES TO THE STUDY OF CULTURE (3-0). Examination of the theories and methods by which culture and society have been studied. Discussion of the relationship among natural scientific, social scientific, and humanistic methodologies. Fulfills Foundation requirement.

5304. CULTURAL STUDIES (3-0). The study of how elements of culture, particularly texts, practices, and material objects, are interconnected with structures of power. Topics may include analyses of cultural studies in various humanities disciplines, theoretical approaches to cultural studies, and the relationship between cultural studies and the traditional humanities disciplines. Fulfills Foundation requirement.

5306. CRITICISM, LANGUAGE, AND HISTORY (3-0). This course examines the ways in which linguistics, literary criticism and history have intersected in 20th century thought. Areas of analysis may include anthropology, historiography, poetics, rhetoric, semiotics, and/or structuralism. Fulfills Foundation requirement.

5307. TOPICS IN GENDER STUDIES (3-0). Analysis of the role of gender studies in the humanities disciplines. Topics may include examination of the methods and conclusions of gender analysis in history, the social sciences, philosophy, or literary criticism. Fulfills Foundation requirement.

5391. CONFERENCE COURSE IN THE HUMANITIES (3-0).

5392. TOPICS IN THE HUMANITIES (3-0). Selected topics of interdisciplinary interest. May be repeated for credit when subject matter changes.

5398. THESIS (3-0). The graduate student must be registered for this when in consultation over the thesis with the supervisory committee.

5698. THESIS (6-0). The graduate student must be registered for this course (a) when in consultation over the thesis with the supervisory committee and (b) in the semester or term in which the Master of Arts degree will be conferred.

6391. READINGS IN THE HUMANITIES (3-0). Supervised individual study for students preparing for the comprehensive examination.

Department of Linguistics and TESOL

ling.uta.edu

Areas of Study and Degrees

Linguistics
M.A., Ph.D.
TESOL
M.A., Graduate Certificate
Humanities
M.A.
(See Program in Humanities)

Master's Degree Plans

Thesis and Non-Thesis

Chair

Colleen Fitzgerald
403 Hammond, 817.272.3133

Ph.D. Graduate Advisor

Jerold A. Edmondson
403 Hammond, 817.272.3133

M.A. Linguistics Advisor

Laurel S. Stvan
403 Hammond, 817.272.3133

M.A. TESOL Advisor

Laurel S. Stvan
403 Hammond, 817.272.3133

Graduate Faculty

Professors
Edmondson, Silva
Associate Professors
Burquest, Fitzgerald, Stvan
Assistant Professor
Ouellette
Adjunct Professors
Franklin, Gregerson, Grimes, Headland, G. Huttar, Kroeger, Rensch, Robbins
Adjunct Associate Professor
Hwang
Adjunct Assistant Professors
Boothe, Bowling, Bruce, Cahill, Casali, Crowell, Del Aguila, Diehl, Gallman, Hohulin, M. Huttar, Kindell, Leaders, McElhanon, C. McKinney, N. McKinney, Morgan, Morren, Ostrum, Reed, Ross, Simons, Turnbull, Unseth, Walker, Walter, Wendell
Professor Emeritus
Longacre

Objectives

Linguistics, the systematic study of human language, is situated at the crossroads of the humanities, the social sciences, and the physical sciences. The Department of Linguistics and TESOL at The University of Texas at Arlington provides comprehensive training in methods of language analysis, as informed by current linguistic theory and data from a variety of languages. Students receive instruction in the analysis of sound systems (phonetics and phonology) and grammar (morphology and syntax); in addition, the program has strengths in field linguistics, discourse analysis, sociolinguistics, literacy, translation and teaching English to speakers of other languages (TESOL). Linguistic science has applications in language learning and teaching, literary analysis and criticism, psychology, communication, anthropology, philosophy, neurology, sociology, speech recognition and synthesis, and artificial intelligence. Graduates of the program may find employment in fieldwork and field program administration, international affairs and development, literacy consultation and language planning, language technology, research, teaching and translation.

The master's degree in Linguistics provides training in the core areas of linguistics as well as firsthand experience working with geographically diverse, often previously undocumented languages.

The master's degree in TESOL provides broad-based training in the core areas of linguistics as well as concentrated training in areas particularly important to Teaching English to Speakers of Other Languages, including second language acquisition, the phonological and grammatical structure of English, contrastive and error analysis, and curriculum design.

The Ph.D. degree provides advanced training in field linguistics and linguistic computing, and experience in presenting original research in professional venues. Students are expected to develop in-depth expertise in at least one area of specialization.

For further information on graduate degree programs in Linguistics, consult the program's Web site at ling.uta.edu or contact the appropriate Graduate Advisor.

Degree Requirements

Linguistics

Graduate programs in linguistics are primarily designed for those with a background in one or more foreign languages and/or a background in the linguistic aspects of the English language. A graduate career in linguistics may also be appropriate to those with undergraduate study in anthropology, psychology, philosophy, or religion. Applicants without formal training in linguistics are invited to apply, provided that they are prepared to meet the department's requirements for leveling courses.

Requirements for master's and doctoral degrees are given in the Advanced Degrees and Requirements section of this catalog. In addition, the following apply to those pursuing a graduate degree in linguistics:

All students pursing a graduate degree in linguistics must meet the degree prerequisites (i.e., leveling courses) and must take the core courses appropriate to their degree as published on the department's Web site.

Linguistics Degree Plans

M.A. Thesis Degree Plan: 31 hours 24 hours of graduate-level coursework plus one hour thesis writing course (LING 5100) plus 6 hours thesis credit (LING 5698). Students requiring leveling courses must add 9 hours, for a total of 40 hours.

M.A. Thesis Substitute Degree Plan: 34 hours 30 hours of graduate-level coursework plus one hour thesis writing course (LING 5100) plus three hours thesis substitute credit (LING 5392) plus written examination plus oral defense of the thesis substitute. Students requiring leveling courses must add 9 hours, for a total of 43 hours.

M.A. Non-Thesis Degree Plan: 36 hours of graduate-level coursework plus comprehensive written examination on the coursework. Students requiring leveling courses must add 9 hours, for a total of 45 hours.

Ph.D. Degree Plan: 42 hours of graduate-level coursework, including 12 hours of linguistic core courses, 12 hours of professional development courses, 6 hours in an area of specialization, 3 hours of dissertation proposal preparation (LING 6391) and 9 hours of dissertation (LING 6999). Students requiring leveling courses must add 9 hours, for a total of 51 hours.

All Ph.D. students must demonstrate knowledge of core areas in linguistics by passing a diagnostic examination before having completed 27 hours of enrollment in the doctoral program. In addition, there are foreign language and professional activities requirements that must be met. Visit ling.uta.edu for details.

TESOL (Teaching English to Speakers of Other Languages)

Graduate programs in TESOL are primarily designed for those with a background in English language and literature and/or education. A graduate career in TESOL may also be appropriate to those with undergraduate study in a foreign language, international studies, or community development.

Requirements for master's degrees are given in the Advanced Degrees and Requirements section of this catalog. In addition, the following apply to those pursuing a graduate degree in TESOL:

TESOL Degree Plans

M.A. Thesis Degree Plan: 33 hours 24 hours of graduate-level coursework plus a three credit course in research design (e.g., LING 6381) plus six hours thesis credit (LING 5698).

M.A. Non-Thesis Degree Plan: 36 hours of graduate-level coursework plus comprehensive written examination on the coursework.

All M.A. TESOL students must demonstrate knowledge of a foreign language prior to unconditional admission to the degree program. Those without such background may pursue study of a foreign language at UT Arlington concurrent with probationary enrollment in the M.A. TESOL program.

For additional information on prerequisites or degree requirements, consult the Graduate Advisor.

Certificate in Teaching English to Speakers of Other Languages (TESOL)

This program provides preparation through study and practice for the individual who wishes to teach English to speakers of other languages. It is available to any student who has been admitted to the Graduate School at UT Arlington.

The certificate requires 18 hours of coursework: LING 5300, 5301, 5302, 5305, 5310, and 5303 or 5304. In addition to the course work, there is a practicum; this is done under LING 5110. LING 5300 (or equivalent linguistics course work) is a prerequisite for LING 5301, 5302, 5305, and 5310; LING 5301 is a prerequisite for 5303, and 5304. Even if the student presents an equivalency of LING 5300, 5301, and/or other coursework, the 18-hour requirement must be met. A maximum of three credit hours of course work done at another institution can be transferred and counted toward the certificate.

Upon beginning study for the certificate, the student should contact the Graduate Advisor in TESOL to declare the intention to earn the certificate.

International Linguistics Center (SIL International)

The International Linguistics Center (ILC) is home to both SIL International (SIL) and the Graduate Institute of Applied Linguistics (GIAL), two non-profit organizations that conduct research and provide training of interest to linguists, translators, missionaries, anthropologists, literacy workers, bilingual educators, government officials, and others. Since the 1970s, UT Arlington has entered into a series of contractual agreements with SIL and GIAL such that many of the linguists based at the ILC hold appointments at UT Arlington as special members of the Graduate Faculty. The most current agreement also specifies terms for credit transfer between UT Arlington and GIAL. The ILC is located approximately 14 miles from UT Arlington, one mile west of Duncanville, at 7500 West Camp Wisdom Road, Dallas.

For more information about the ILC and its relationship to UT Arlington, contact the Chair of the Department of Linguistics and TESOL, 403 Hammond Hall, 817.272.3133. Information specific to SIL can be obtained from SIL Vice President of Academic Affairs Paul Frank (972-708-7532) or at **www.sil.org**. Information about GIAL is available from GIAL President David A. Ross (972-708-7340) or at **www.gial.edu**.

Admission Requirements for Graduate Degree Programs in Linguistics

(NOTE: See online catalog at **www.uta.edu/gradcatalog/linguistics** for Admission Requirements for Fall 2006 semester and thereafter)

In evaluating candidates for admissions to its graduate degree programs, the Linguistics and TESOL Faculty has adopted a comprehensive approach that is sensitive to the diversity of backgrounds of its applicants. To this end, the following constellation of quantitative and qualitative factors has been established to make explicit the range of criteria upon which admissions decisions will be based. These factors are then applied to the Admission Metrics established for each degree program. (See below for admission requirements for the Graduate Certificate in TESOL.)

Admission Factors

Admission decisions into a degree program in the Department of Linguistics and TESOL are made on the basis of two types of factors, quantitative and qualitative.

1. Quantitative Factors
   a. Grade Point Average (GPA)
      i. For M.A. program applicants, undergraduate GPA is determined by the UT Arlington Graduate School.
      ii. For Ph.D. program applicants, GPA is based on all graduate work completed and recorded at the time the applicant submits an application for admission.

b. Graduate Record Examination (GRE) Scores
All applicants are required to submit GRE scores. There are no exceptions. The Department of Linguistics and TESOL evaluates each applicant's sub-scores separately: verbal, quantitative, and analytical.

2. Qualitative Factors
a. Letters of Recommendation
Each applicant must present three (3) letters of recommendation that unequivocally indicate that the applicant is prepared for and capable of successful graduate study in linguistics or TESOL at UT Arlington. The letters should further indicate that the applicant is capable of completing the appropriate degree program.
b. Personal Statement
Each applicant must write a statement that explains how graduate study in linguistics is related to both his/her previous academic training and his/her career goals. The statement will be evaluated on the degree to which it is clear, reasonable, and consistent with the research and teaching agenda of the current faculty in Linguistics and TESOL at UT Arlington. The statement should also convey a level of commitment and maturity commensurate with the applicant's desired degree goals.
c. Undergraduate Preparation
Applicants to the M.A. in TESOL program should have passed the following three courses or reasonable equivalents as determined by the graduate advisor (UT Arlington equivalents are noted in parentheses):
i. English composition (ENGL 1302);
ii. a course on English-language literature (ENGL 2319, ENGL 2329);
iii. the equivalent of a fourth-semester course in a foreign language (SPAN 2314, FREN 2314, etc.). Students whose undergraduate education was delivered in a language other than English are exempt from this requirement.

Applicants to the M.A. in Linguistics or Ph.D. in Linguistics programs should have passed the following three courses or reasonable equivalents as determined by the graduate advisor (UT Arlington equivalents are noted as in parentheses):
i. English composition (ENGL 1302);
ii. college-level mathematics (MATH 1302);
iii. a laboratory science (any 1000-level course in BIOL, CHEM, GEOL or PHYS; LING 5322 may also be used to fulfill this requirement);
d. Previous Graduate Work (Ph.D. applicants only)
Ph.D. applicants must present at least 30 semester credit hours of previous graduate-level coursework in any field (not necessarily linguistics). Ph.D. applicants who present fewer than 30 semester credit hours will automatically be considered as applicants to the M.A. Linguistics program and will be afforded the opportunity to request entry into the doctoral program once the minimum number of hours have been attained.

Admission Metrics

In formulating a recommendation for admission, the graduate advisors will apply the following admission metrics to each applicant's admission dossier.

1. M.A. in TESOL
a. Unconditional Admission
Applicants for the M.A. in TESOL will be offered unconditional admission if they meet either of the following two sets of criteria:
i. The applicant presents an undergraduate GPA of at least 3.0, a GRE Verbal score of at least 550, a GRE Quantitative score of at least 450, a GRE Analytical score of at least 4.0, and a full set of Qualitative Factors. In addition, applicants for whom English is not their native language and who have not been granted an undergraduate degree by an English-medium institution must also present a Test of English as a Foreign Language (TOEFL) score of at least 250.
ii. The applicant presents an undergraduate GPA of at least 3.5, a GRE Verbal score of at least 500, a GRE Quantitative score of at least 400, a GRE Analytical score of at least 3.5, and a full set of Qualitative Factors. In addition, applicants for whom English is not their native language and who have not been granted an undergraduate degree by an English-medium institution must also present a Test of English as a Foreign Language (TOEFL) score of at least 250.
b. Probationary Admission
Applicants for the M.A. in TESOL who present a complete application that:
i. includes a GRE Verbal score of less than 500; or
ii. includes a GRE Quantitative score of less than 400; or
iii. includes a GRE Analytical score of less than 3.5
iv. lacks the undergraduate preparation specified above but who otherwise meet a majority of the remaining admission criteria (including an undergraduate GPA of at least 3.0), will be offered probationary admission. Students on probation must:
- complete any undergraduate courses necessary for unconditional admission during their first two semesters of study; and
- achieve a GPA of at least 3.3 in the first 9 graduate-level credit hours as an M.A. TESOL student.

2. M.A. in Linguistics
a. Unconditional Admission
Applicants for the M.A. in Linguistics will be offered unconditional admission if they meet either of the following sets of criteria:
i. The applicant presents an undergraduate GPA of at least 3.0, a GRE Verbal score of at least 450, a GRE Quantitative score of at least 550, a GRE Analytical score of at least 4.0, and a full set of Qualitative Factors. In addition, applicants for whom English is not their native language and who have not been granted an undergraduate degree by an English-medium institution must also present a Test of English as a Foreign Language (TOEFL) score of at least 230.
ii. The applicant presents an undergraduate GPA of at least 3.5, a GRE Verbal score of at least 400, a GRE Quantitative score of at least 500, a GRE Analytical score of at least 3.5, and a full set of Qualitative Factors. In addition, applicants for whom English is not their native language and who have not been granted an undergraduate degree by an English-medium institution must also present a Test of English as a Foreign Language (TOEFL) score of at least 230.
b. Probationary Admission
Applicants for the M.A. in Linguistics who present a complete application that:
i. includes a GRE Verbal score of less than 400; or
ii. includes a GRE Quantitative score of less than 500; or
iii. includes a GRE Analytical score of less than 3.5
iv. lacks the undergraduate preparation specified above but who otherwise meet a majority of the remaining admission

criteria (including an undergraduate GPA of at least 3.0), will be offered probationary admission. Students on probation must:

- complete any undergraduate courses necessary for unconditional admission during their first two semesters of study; and
- achieve a GPA of at least 3.3 in the first 9 graduate-level credit hours as an M.A. Linguistics student.

3. Ph.D. in Linguistics

a. Unconditional Admission

Applicants for the Ph.D. in Linguistics will be offered unconditional admission if they meet either of the following sets of criteria:

i. The applicant presents an graduate GPA of at least 3.3, a GRE Verbal score of at least 500, a GRE Quantitative score of at least 550, a GRE Analytical score of at least 4.0, and a full set of Qualitative Factors. In addition, applicants for whom English is not their native language and who have not been granted an undergraduate degree by an English-medium institution must also present a Test of English as a Foreign Language (TOEFL) score of at least 230.

ii. The applicant presents an undergraduate GPA of at least 3.6, a GRE Verbal score of at least 450, a GRE Quantitative score of at least 500, a GRE Analytical score of at least 3.5, and a full set of Qualitative Factors. In addition, applicants for whom English is not their native language and who have not been granted an undergraduate degree by an English-medium institution must also present a Test of English as a Foreign Language (TOEFL) score of at least 230.

b. Probationary Admission

Applicants for the Ph.D. in Linguistics who present a complete application that:

i. includes a GRE Verbal score of less than 450; or

ii. includes a GRE Quantitative score of less than 500; or

iii. includes a GRE Analytical score of less than 3.5

iv. lacks the undergraduate preparation specified above but who otherwise meet a majority of the remaining admission criteria (including an undergraduate GPA of at least 3.3), will be offered probationary admission. Students on probation must:

- complete any undergraduate courses necessary for unconditional admission during their first two semesters of study; and
- achieve a GPA of at least 3.3 in the first 9 graduate-level credit hours (in LING courses) as a Ph.D. Linguistics student.

For those applicants whose credentials do not meet the conditions for unconditional or probationary admission as outlined above, the graduate advisor will recommend one of the following:

c. Provisional Admission

Applicants unable to supply all required documentation prior to the admission deadline but who otherwise appear to meet admission requirements (either unconditional or probationary) may be granted provisional admission. All necessary admission documentation must be submitted to the UT Arlington Graduate School by the end of the student's first semester of study, including all required standardized test scores.

d. Deferred Admission

Applicants for whom the admission file is incomplete but for whom provisional admission is not appropriate will have a final decision admission deferred. In such cases, a final decision will be made only when the applicant presents a complete admission file.

e. Denial of Admission

Applicants who do not meet a majority of the admission standards set forth above will be referred to the Linguistics Graduate Studies Committee (GSC) for final adjudication. Upon considering the applicant's credentials, the GSC may (1) recommend to the Dean of the Graduate School that the applicant be admitted on probation and (2) specify the relevant conditions. The GSC may otherwise recommend that the applicant be denied admission.

Special Admissions Requirements for the Graduate Certificate in TESOL

Students wishing to apply to the UT Arlington Graduate School as Special Students solely for the purpose of earning the Graduate Certificate in TESOL must have earned an undergraduate degree at an accredited institution and present an undergraduate GPA of at least 3.0 (as determined by the UT Arlington Graduate School). Applicants for whom English is not their native language and who have not been granted an undergraduate degree by an English-medium institution must also present a Test of English as a Foreign Language (TOEFL) score of at least 250. Students seeking to transfer from Special Student status into a graduate degree program at UT Arlington must re-apply to the UT Arlington Graduate School as degree-seeking students and meet all published admissions requirements, including those pertaining to standardized tests. No student will be "automatically" or "exceptionally" moved from Special Student status into any graduate degree program.

The Web site for the UT Arlington Office of Research and Graduate Studies provides additional information about graduate study at UT Arlington and about the admission process, including general testing requirements and other paperwork. Students may apply for admission online or request application materials be sent via post.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Linguistics (LING)

5100. THESIS WRITING SEMINAR (1-0). Techniques for researching and writing a thesis/dissertation in linguistics. Required of all students who have elected the Thesis or Thesis Substitute degree option in Linguistics. Prerequisite: completion of at least 9 hours of LING courses.

5110. TESOL PRACTICUM (1-0). In observing ESOL classes or in teaching learners of ESOL, the student demonstrates ability to apply the principles presented in the TESOL Certificate coursework. Prerequisite: LING 5302 and LING 5305 and permission of instructor.

5190. CONFERENCE COURSE IN LINGUISTICS (1-0). Graded P/F. Prerequisite: Permission of instructor.

5300. LINGUISTIC ANALYSIS (3-0). An overview of the study of human language from a linguistic perspective. Topics covered may include the analysis of language structures, the study of language in social contexts, the principles governing language change, and the application of linguistic analysis to language teaching, literary studies, literacy, and translation. May not be used to fulfill M.A. or Ph.D. degree requirements in linguistics.

5301. TEACHING ENGLISH AS A SECOND OR FOREIGN LANGUAGE (3-0). Presentation and critique of methodologies of teaching English to speakers of other languages, with emphasis on techniques of teaching aural comprehension; speaking, reading, and writing skills; attention to testing, language laboratory, and linguistic-cultural differences.

5302. METHODS AND MATERIALS FOR TEACHING ENGLISH AS A SECOND OR FOREIGN LANGUAGE (3-0). Systematic study of the application of linguistic theory and findings; emphasis on pedagogical strategies, materials, and tests; attention to current and past research and practices. Prerequisite: LING 5301.

5303. CONTRASTIVE ANALYSIS AND ERROR ANALYSIS IN THE TEACHING OF ENGLISH AS A SECOND OR FOREIGN LANGUAGE (3-0). A study of contrastive analysis and error analysis as means of defining student problems and progress; emphasis on current research; application to specific problems and contexts. Prerequisite: LING 5300 and LING 5301.

5304. PEDAGOGICAL GRAMMAR OF ENGLISH (3-0). Grammaticality, variation, and acceptability applied to teaching English as a second or foreign language. Problems of description; means of application; adaptation to current pedagogical methods. Prerequisite: LING 5300 and LING 5301.

5305. SECOND LANGUAGE ACQUISITION (3-0). Study of the processes of first and second language acquisition, their similarities and differences, language disorders, language perception and production, and implications of language acquisition research for linguistic theory and language teaching. Prerequisite: LING 5300 or permission of instructor.

5306. TESOL CURRICULUM DESIGN (3-0). Systematic presentation of elements in development, management and evaluation of TESOL programs. Attention to needs analysis, syllabus design, materials selection and adaptation, teaching and evaluation in language curriculum design. Prerequisite: LING 5301.

5307. PEDAGOGICAL PHONOLOGY OF ENGLISH (3-0). A study of the sound system of English. Topics include segmental phonemes, stress, length, intonation and variation at the lexical and utterance levels. Application to teaching English as a second or foreign language. Problems of description; means of application; adaptation to current pedagogical methods. Prerequisite: LING 5300 and LING 5301.

5310. SOCIOLINGUISTICS (3-0). The study of language and social context (made up of society and individuals). Content includes language as a social phenomenon, theoretical perspectives on relationship between language, society and individuals, basic concepts in sociolinguistics; and may include topics in macro- and micro-sociolinguistics such as multilingualism, language planning and standardization, linguistic variation, code switching, conversational analysis, and language and gender.

5311. SOCIOLINGUISTICS OF SOCIETY (3-0). The study of macro-sociolinguistics, including topics such as multilingualism, language standardization and planning, literacy, language dominance, maintenance and death, language and identity, diglossia, and pidgins and creoles. Prerequisite: LING 5310.

5312. LANGUAGE AND GENDER (3-0). The role of language in the expression and creation of gender identities. Gender differences in language structure and use, men's and women's languages in other cultures, the acquisition of gendered ways of speaking, and sexism in language. Prerequisite: LING 5310.

5313. TOPICS IN SOCIOLINGUISTICS (3-0). Selected topics relating the scientific methodologies of linguistics to larger concerns of society and culture including cognition, motivation, description and analysis. May be repeated for credit when topic changes. Prerequisite: LING 5310.

5314. HISTORICAL AND COMPARATIVE LINGUISTICS (3-0). The study of language development and change; comparative method and its use in linguistic reconstruction; laws of language change. Prerequisite: LING 3330 or permission of instructor.

5320. PHONOLOGICAL THEORY (3-0). Explores the principles governing sound systems in human languages. Prerequisite: LING 3330 or permission of instructor.

5321. ADVANCED PHONOLOGICAL THEORY (3-0). A continuation of LING 5320. Topics include autosegmental analysis, lexical phonology, metrical phonology and phonological feature geometry. May be repeated for credit when topic changes. Prerequisite: LING 5320.

5322. LABORATORY PHONOLOGY (3-0). An investigation into the physical properties of human speech. Students will gain hands-on experience with computer-assisted speech analysis. No prior computer experience is assumed. Prerequisite: LING 5320.

5330. FORMAL SYNTAX (3-0). Explores the grammatical structures characteristic of human language by analyzing data from diverse languages within the theoretical framework of formal syntax. Prerequisite: LING 3340 or permission of instructor.

5331. ADVANCED FORMAL SYNTAX (3-0). A continuation of LING 5330. Investigates theoretical controversies in formal syntax and provides extensive opportunity for application in linguistic field work. Prerequisite: LING 5330.

5332. DISCOURSE GRAMMAR (3-0). Studies grammatical structures of discourse, paragraph, sentence, and clause, using texts and other data from typologically different languages. Focuses on both morphosyntactic forms and their functions in discourse.

5333. FUNCTIONAL-TYPOLOGICAL GRAMMAR (3-0). Grammatical analysis based on the communicative functions of grammar as mediated through discourse; involves comparison across languages. Prerequisite: LING 5330.

5334. MORPHOLOGY (3-0). A theoretical and typological investigation into the nature of word-structure and word-formation processes in human languages. Prerequisite: LING 5320 or LING 5330.

5335. LANGUAGE UNIVERSALS AND LINGUISTIC TYPOLOGY (3-0). Consideration of universals in human language, their explanation and description, and language types. Prerequisite: LING 5330.

5340. PRINCIPLES OF TRANSLATION (3-0). Theory and procedures in cross-language transfer with emphasis on basic linguistic notions such as form vs. meaning, multiple senses, and types of lexical equivalences and sociolinguistic factors involved in idiomatic translation. May not apply toward degree requirements if LING 5341 and ANTH 5342 are applied.

5341. PRINCIPLES OF LITERACY (3-0). Principles involved in the introduction of literacy to preliterate societies. Includes consideration of motivational factors, stimulation of indigenous authorship, orthography design, elements of reading methodology and alternative strategies for literacy programs. May not apply toward degree requirements if LING 5340 and ANTH 5342 are applied.

5342. LITERACY INSTRUCTION AND APPLIED LINGUISTICS (3-0). A study of the linguistic, pedagogical, and sociocultural bases for training literacy teachers in languages of preliterate societies. Surveys current trends in literacy instruction, issues of language choice, and the use of linguistically appropriate material.

5343. READING THEORY AND APPLIED LINGUISTICS (3-0). Survey of reading theory with practical application to preparation of literacy materials for preliterate societies. Focuses on specific linguistic and psycholinguistic factors involved.

5344. SOCIOLINGUISTIC ASPECTS OF LANGUAGE PROGRAMS (3-0). Survey of the linguistic and social factors involved in the development of language programs for preliterate speakers of vernacular languages. Special attention given to the effect of using the mother tongue and/or a second language in such programs, and accompanying measurement and documentation.

5345. SEMANTICS (3-0). Considers meaning with respect to how humans form concepts in terms of semantic features, categorization, prototype imaging, cultural scenes, scripting and coherence within world views. Prerequisite: LING 3340 or permission of instructor.

5346. TOPICS IN APPLIED LINGUISTICS (3-0).

5347. PRAGMATICS (3-0). Analysis of how context and form interact with meaning. Topics may include deixis, reference, speech acts, presupposition, implicature, information structure and intonation.

5350. TEXT ANALYSIS (3-0). Methods of charting and analyzing texts to reveal the systematic contributions of pragmatic choices to their organization and meaning. Prerequisite: LING 3340.

5351. SPOKEN DISCOURSE (3-0). Techniques for collecting, transcribing, and analyzing conversation and other forms of spoken communication. Topics may include discourse prosody, turn-taking and exchange structure, interactional sociolinguistics, discourse in oral cultures, and cross-cultural communication. Prerequisite: LING 5310.

5360. NON-WESTERN LINGUISTIC STRUCTURES (3-0). Study of a selected non-Western language, language family or language area based on descriptive linguistic analysis. May be repeated once for credit as the topic varies. Prerequisite: LING 3330 and LING 3340.

5361. READINGS IN NON-WESTERN LINGUISTIC STRUCTURES (3-0). May not be used to fulfill the non-Western language requirement.

5370. SURVEY OF LINGUISTIC THEORIES (3-0). A comparison and contrast of various linguistic theories, with consideration of their assumptions and problem-solving capacities. Prerequisite: LING 5330.

5371. SURVEY OF THEORIES IN APPLIED LINGUISTICS (3-0). A comparison and contrast of various linguistic theories, with consideration of their implications for application to real-world problems involving language. Prerequisite: LING 5305.

5372. READINGS IN LINGUISTICS (3-0). May be repeated for credit when topic changes. Prerequisite: LING 5330.

5380. FIELD METHODS (3-0). The principles, techniques and practical aspects of linguistic field research. The course includes extensive practice in eliciting data (phonological, morpho-syntactic, textual and lexical) directly from a native speaker, as well as in managing, analyzing and describing the data obtained. Prerequisite: LING 5300.

5381. THE COMPUTER AND NATURAL LANGUAGE (3-0). Applications of computers to linguistic analysis, and applications of linguistic analysis to computing. Topics may include natural language processing, speech recognition and synthesis, language prostheses, statistical analysis, text processing, and corpus analysis.

5391. CONFERENCE COURSE IN LINGUISTICS (3-0).

5392. THESIS SUBSTITUTE (3-0).

5393. TESOL TEACHING AND OBSERVATION (3-0). In teaching learners of ESOL and observing ESOL classes, the student demonstrates ability to apply the principles presented in the M.A. TESOL coursework. Prerequisite: LING 5302 and LING 5305 and permission of instructor.

5398. THESIS (3-0).

5698. THESIS (6-0).

5998. THESIS (9-0).

6191. RESEARCH IN LINGUISTICS (1-0). Prerequisite: permission of instructor.

6199. DISSERTATION (1-0).

6291. RESEARCH IN LINGUISTICS (2-0). Prerequisite: permission of instructor.

6300. PROFESSIONAL WRITING SEMINAR (3-0). Prerequisite: Completion of at least 9 hours of LING courses.

6360. DISCOURSE THEORY SEMINAR (3-0). Prerequisite: permission of instructor.

6380. FIELD METHODS SEMINAR (3-0). Prerequisite: LING 5380.

6381. RESEARCH DESIGN AND STATISTICS (3-0). Practical training in methodologies and analytical techniques common in linguistic research. Topics include qualitative vs. quantitative data analysis, questionnaire design and administration, laboratory protocol, field protocol, population sampling, statistical analysis, and research ethics.

6390. LINGUISTICS SEMINAR (3-0). Course may be repeated for credit when topic changes. Prerequisite: permission of instructor.

6391. RESEARCH IN LINGUISTICS (3-0). Prerequisite: permission of instructor.

6399. DISSERTATION (3-0).

6491. RESEARCH IN LINGUISTICS (4-0). Prerequisite: permission of instructor.

6591. RESEARCH IN LINGUISTICS (5-0).

6691. RESEARCH IN LINGUISTICS (6-0). Prerequisite: Permission of instructor.

6699. DISSERTATION (6-0).

6999. DISSERTATION (9-0).

Department of Modern Languages

langlab.uta.edu

Areas of Study and Degrees
Masters of Arts in Modern Languages
(French; Spanish)

Master's Degree Plans
Thesis, Thesis Substitute and Non-Thesis

Chair
A. Raymond Elliott
230 Hammond
817.272.3161

Graduate Advisor
Aimee Israel-Pelletier
310 Hammond
817.272.5530

Graduate Faculty
Associate Professors
Choi, Conway, Elliott, Israel-Pelletier, Rings, Sol, van Noort

Assistant Professors
Austin, Kania, Rueda Acedo, Ruiz-Perez, Seminet, Watson

Professors Emeritus
Acker, Keilstrup, Ordoñez, Sanchez, Studerus, Viña

Specialist/LAC Director
Bowden

Objectives

Modern Languages (French; Spanish)

Graduate programs in modern languages are designed to enhance students' competence in the language and literature of their major language field. Specific objectives are to prepare students for a career in teaching or in any area in private or public life in which knowledge of a modern language is essential and to help them develop the techniques of independent research necessary for work beyond the master's level.

Admission Standards

In compliance with HB 1641, the UT Arlington Department of Modern Languages does not use unwritten criteria, it does not assign a specific weight to any one factor being considered, and it does not use standardized tests (i.e., the GRE) in the admissions or competitive fellowship or scholarship process as the sole criterion for consideration or as the primary criterion to end consideration of an applicant to the M.A. program. However, the GRE is required and it is used as a criterion, without specific weight, in the Department's evaluation of candidates for admission to programs at each of three levels: Unconditional, Provisional, and Probationary Admission.

The Department wishes to be as thorough and fair as possible in evaluating applicants for admission. It recognizes that some applicants may appear to be stronger according to some criteria than according to other criteria. When an applicant does not completely meet the minimum expectations for Unconditional Admission, the Department considers the applicant for possible Provisional or Probationary Admission. When the applicant is not granted any of the three levels of admission, the decision may be deferred or the application is denied. We do not wish to exclude a qualified and potentially successful candidate who perhaps has approached but not met all the criteria completely. However, we do not wish to admit candidates who, based on the criteria, are deemed to have a poor chance of successfully completing the graduate program.

Unconditional Admission

The criteria for admission below are used, without specific weights, as positive indicators of potential success in the program. All four criteria for unconditional admission must be met in order to receive unconditional admission.

- degree in the language to be studied of 18 upper level hours in the language or equivalent [1]
- 3.0 undergraduate GPA (last 60 hours)
- submission of GRE scores [2]
- 3 letters of recommendation (from faculty if possible) sent to the Department of Modern Languages Graduate Advisor.

[1] A student with a bachelor's degree in a field other than French or Spanish may become an unconditionally admitted graduate student after fulfilling the upper level requirements in the language:
18 hours of upper level Spanish, or French or
a combination of coursework and testing.
(A person with a bachelor's degree in a major other than French or Spanish must have the equivalent of 18 hours of upper level French or Spanish in order to become a master's student. The equivalency may take one of the following forms: A student may obtain 18 hours at the 3000 and 4000 level, or s/he may attempt to test out of nine hours of grammar, composition, and conversation. If a student tests out of grammar, composition, and conversation, s/he must take nine hours of literature, in order to demonstrate ability to do literary studies).

[2] Under specific circumstances the GRE may be waived for those who received their B.A. from UT Arlington. See GRE Waiver or Advanced Admission. International students must also take the TOEFL test and score 550 on the paper-and-pencil test or 213 on the computerized test, in order to qualify for unconditional admission.

Provisional Admission

An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission.

Deferred Admission

A deferred decision may be granted when a file is incomplete or when a denied decision is not appropriate.

Fellowships

Fellowships, when available, will be awarded on a competitive basis. Nominees for the Graduate School Master's Fellowship in Modern Languages will be selected based on the following criteria:

- Candidates must be new students entering in the fall semester, with a minimum of 6 hours of enrollment in both long semesters to retain their fellowships.
- The minimum undergraduate GPA requirement is 3.0, as calculated by the Graduate School, plus as GPA of 3.0 for any graduate credit hours.
- Transcript of a completed bachelor's degree in French or Spanish (or appropriate related field) from an accredited institution.
- Three letters of recommendation.
- A written statement explaining the applicant's reasons for graduate study in Spanish.

Teaching Assistantships

Teaching assistantships are available for graduate students in the Department of Modern Languages. Graduate students who obtain teaching assistantships are urged to take MODL 5305 Methods of Modern Language Teaching.

Degree Requirements

In addition to the Graduate School requirements for Master's degree programs, the following requirements apply in the Department of Modern Languages:

Thesis: A written comprehensive examination may be given at the discretion of the student's committee.

Thesis Substitute: There will be a comprehensive examination on the coursework and appropriate reading list. An oral defense of the thesis substitute may be required at the discretion of the student's supervising committee. At least 30 hours must be in coursework.

Non-thesis: There will be a comprehensive written examination on the coursework, an appropriate reading list, as well as an oral exam.

Modern Languages (French; Spanish)

Those wishing to major in a modern language or literature must upon admission have a baccalaureate degree with a major in that modern language or have a minimum of 18 advanced hours, or the equivalent in language proficiency and course content.

Modern Languages (French; Spanish) Students pursuing the M.A. in Modern Languages with concentration in French or in Spanish are required to take a minimum of 9 hours in the core MODL courses along with 27 hours in their concentration or alternatively a maximum of 12 hours in the core MODL courses and 24 hours in their concentration. All students are required to take MODL 5304.

A knowledge of a second foreign language will be required, including listening, speaking, reading and writing skills as demonstrated by the successful completion of two semesters of coursework at the second-year level, MODL 5301, or by an appropriate examination.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Modern Languages (MODL)

5301. MODERN LANGUAGES FOR GRADUATE READING (3-0). An intensive one-semester course designed for Ph.D. candidates and other graduate students to fulfill departmental foreign language requirements. Sections may be offered in French, German, Russian, or other applicable or appropriate languages. Does not fulfill any graduate degree requirements.

5302. TOPICS ACROSS THE LANGUAGES (3-0). This topic course varies in focus and will be taught by in-house faculty or visiting scholars. Taught in English, it will consider issues to cultural and literary concerns across the languages. Possible course offerings include: From Novel to Film, History and/as Literature, Propaganda as Literature, The History and Aesthetics of Film, The Other in Literature and Culture, Freud and the Literary Imagination, and Modernism.

5304. CURRENTS IN EUROPEAN AND LATIN AMERICAN LITERATURES AND THOUGHT (3-0). An examination of the mainstream genres and movements in European and Latin American literatures from 1600 to the present. Taught in English. Required for MA students in Modern Languages. May not be repeated for credit.

5305. METHODS OF MODERN LANGUAGE TEACHING (3-0). Methods of Modern Language Teaching is an applied linguistics course for modern language professionals, focusing on the application of research and theory in linguistics and second language acquisition to the classroom setting. May include specific methods, language learning strategies, cooperative language learning, component and performance skills, and intercultural communication.

5306. L2 ACQUISITION (3-0).
5307. TOPICS IN SECOND LANGUAGE ACQUISITION (3-0). May include topics in the areas of second language acquisition, methodologies, culture, and disciplines related to second language acquisition. May be repeated for credit as topics change.
5308. TECHNOLOGY AND LANGUAGE INSTRUCTION (3-0). Presentation and critique of research regarding the use of electronic media in language instruction; emphasis on computer and video, with attention to the application of research findings to the language classroom.
5309. TRANSLATION THEORY (3-0). Provides an introduction to basic concepts and offers a general conceptual framework for the study of translation theory. Students acquire the tools to identify, analyze and resolve translation problems while developing a rational approach to translation. (Following the completion of this course, students are encouraged to enroll in FREN 5309, GER 5309 or SPAN 5309, Practicum in Translation.)
5310. THEORIES OF LITERATURE AND CULTURE (3-0). Readings, analyses, and applications of recent literary and cultural theories. Particular attention to how such theories may serve to focus or refocus literature as cultural production. Required for the M.A. in French, German, and Spanish.
5391. CONFERENCE (3-0).

French (FREN)

5101. TEACHING PRACTICUM I (1-0). Required of all teaching assistants in French in their first semester. May not be counted toward a master's degree. Graded P/F/R.
5102. TEACHING PRACTICUM II (1-0). Required of all teaching assistants in French in their second semester. May not be counted toward a master's degree. Graded P/F/R.
5314. ADVANCED STYLISTICS (3-0). Focuses on advanced problems of grammar and style, including syntax, morphology, semantics and stylistics. Surveys the history of the French language, including influences of other languages and cultures on its evolution. Attention give to pedagogical models and approaches as well as intensive composition practices.
5316. MEDIEVAL AND RENAISSANCE LITERATURE AND CULTURE (3-0). A study of the main currents of French literature and culture in their social, economic and political context through the representative genres of the period: epic verse, poetry, tales, fabliaux, comic narrative, and theatre to name a few.
5317. 17TH AND 18TH CENTURY LITERATURE AND CULTURE (3-0). A study of the main currents of French literature and culture in their social, economic and political context through the representative genres of the period: theatre, the romance, the novel, the portrait and maxim, the philosophic dialogue and tale, among others.
5318. 19TH AND 20TH CENTURY LITERATURE AND CULTURE (3-0). A study of the main currents of French literature and culture in their social, economic and political context through the representative genres of the period: theatre, the nouvelle, poetry, the novel, the anti-novel, etc.
5321. TOPICS IN GENRES OF THE 17TH CENTURY (3-0). Investigates ideology and practice through literature, the visual arts, music and other cultural "texts." Major topics may include "Versailles: Architecture, Literature, and Politics,"; "Jansenism and its Discontents: Pascal, Racine, de Lafayette," "Libertins: Masks and Counter Masks." May be repeated for credit when topic changes.
5325. TOPICS IN GENRES OF THE 18TH CENTURY (3-0). Studies oppositional discourse as expressed through the different genres (theatre, poetry, fiction, political and philosophical writings) popular in the 18th century as well as the role and the effect of these works in constituting the Republic of Letters. May be repeated for credit when topic changes.
5330. TOPICS IN GENRES OF THE 19TH CENTURY (3-0). Concentrates on literature, the visual arts, entertainment, and fashion as expressions of popular culture. The rise of the "petite bourgeoisie,"; social utopias, the rebuilding of Paris, and responses to modernity will be studied in such courses as "Paris and Its Subcultures," Impressionism and the Bourgeoisie," "The Novel and the Body." May be repeated for credit when topic changes.
5331. TOPICS IN GENRES OF THE 20TH CENTURY (3-0). Focuses on the work of French and Francophone writers in the light of modernist and post-modernist aesthetics. Literature, art, architecture, music, film, video, television, and other forms of popular production are studied as reflections of an era in crisis. May be repeated for credit when topic changes.
5338. TOPICS IN FRENCH CULTURE (3-0).Survey of themes and structures on a range of topics such as "Women in/as Fiction," "Self and Society," "Revolutions," and "French Film." May be repeated for credit when topic changes.
5391. CONFERENCE COURSE IN FRENCH LINGUISTICS, CULTURE, OR LITERATURE (3-0). Graded R. Prerequisite: permission of Graduate Advisor. Course may be repeated for credit when the topic changes.
5398. THESIS (3-0).
5698. THESIS (6-0).
5998. THESIS (9-0).
6310. FRENCH STUDIES (3-0).

Spanish (SPAN)

5101. TEACHING PRACTICUM I (1-0). Required of all teaching assistants in Spanish in their first semester. May not be counted toward a master's degree. Graded P/F/R.
5102. TEACHING PRACTICUM II (1-0). Required of all teaching assistants in Spanish in their second semester. May not be counted toward a master's degree. Graded P/F/R.
5190. CONFERENCE COURSE IN SPANISH LANGUAGE AND LITERATURE (1-0). Graded P/F/R.
5300. HISTORY OF THE SPANISH LANGUAGE (3-0). Development of the Spanish language from its earliest forms to the present. Required for the MA in Spanish and the MA in Humanities with Spanish concentration.
5302. SPANISH DIALECTOLOGY (3-0). Phonological, lexical, and grammatical features in Iberia, South and North America, the Philippines, and in Sephardic dialect.
5303. APPLIED SPANISH LINGUISTICS (3-0). Pedagogy, pronunciation and orthography, morphology, syntax, semantics, and culture. Required for the MA in Spanish and the MA in Humanities with Spanish concentration unless 5302 taken.
5310. TOPICS IN PENINSULAR SPANISH LITERATURE AND CULTURE TO THE EIGHTEENTH CENTURY (3-0). Topics may include: Medieval Spanish literature and culture, Golden Age Spanish literature and culture, or any particular movement, genre, work or author prior to the eighteenth century. May be repeated for credit when content changes.

5311. TOPICS IN PENINSULAR SPANISH LITERATURE AND CULTURE, EIGHTEENTH CENTURY TO THE PRESENT (3-0). Topics may include: Neoclassic peninsular Spanish literature and culture, peninsular Spanish literature and culture of the Romantic period, Realist or Naturalist Spanish literature and culture, peninsular Spanish literature and culture since 1900, as well as any particular movement, genre, work or author from the eighteenth century to the present. May be repeated for credit when content changes.

5313. TOPICS IN HISPANIC LITERATURE AND CULTURE (3-0). Special studies in areas not ordinarily covered by regular course offerings. Different topics may be repeated for credit.

5314. TOPICS IN SPANISH-AMERICAN LITERATURE AND CULTURE TO MODERNISM (3-0). Topics may include: Colonial Spanish-American literature and culture, pre-modern Spanish-American literature and culture, Spanish-American literature and culture of the Enlightenment, or any particular movement, genre, work or author prior to Modernism. May be repeated for credit when content changes.

5315. TOPICS IN CONTEMPORARY SPANISH-AMERICAN LITERATURE AND CULTURE, MODERNISM TO THE PRESENT (3-0). Topics may include: Spanish-American literature and culture of Modernism, modern Spanish-American literature and culture, or any particular movement, genre, work or author from Modernism to the present. May be repeated for credit when content changes.

5317. U.S. LATINO LITERATURE AND CULTURE (3-0). Readings of poetry, theater, and prose in relation to the specific socio-historical and political context of U.S. Latino life. Charts changing concepts of cultural identity and the evolution of cultural coding in texts written after 1960.

5318. MEXICAN LITERATURE AND CULTURE (3-0). Readings in all Mexican literary genres from various critical perspectives. Particular attention given to the novel, poetry, and essay of the 20th Century and to interrelationships between text and culture.

5320. TOPICS IN SPANISH LINGUISTICS (3-0). Special studies in linguistics not ordinarily covered by regular course offerings. May be repeated for credit when content changes.

5327. WOMEN IN HISPANIC LITERATURE (3-0). Readings of literary texts by women writers from medieval Spain to contemporary Spanish America. Attention to recurrent motifs as well as to the literary expression of historical and cultural transformation.

5330. ADVANCED STUDIES IN SPANISH LINGUISTICS I (3-0). Topics may include: sociolinguistics, bilingualism, modern Spanish dialectology, as well as a detailed study on any one dialect or regional dialect of contemporary Spanish. May be repeated for credit when content changes.

5332. ADVANCED STUDIES IN SPANISH LINGUISTICS II (3-0). Topics may include: Old Spanish, Spanish philology, Spanish text linguistics, and Old Spanish dialectology, as well as a detailed study of any one dialect or regional dialect of Spanish. May be repeated for credit when content changes.

5366. SPANISH FOR SCHOOL ADMINISTRATORS AND TEACHERS (3-0). Development of Spanish proficiency for teachers and administrators through an immersion approach. Emphasis on concepts and terminology related to education, program administration, community involvement and communication with Spanish-speaking parents. This course can be repeated.

5391. CONFERENCE COURSE IN SPANISH LINGUISTICS AND LITERATURE (3-0). Graded R.

5398. THESIS (3-0).

5698. THESIS (6-0).

5998. THESIS (9-0).

Department of Music

www.uta.edu/music/masters

Area of Study and Degrees
Music Education
M.M.
Music Performance
Certificate

Master's Degree Plans
Thesis and Non-Thesis

Chair
John Burton
101 Fine Arts
817.272.2444

Graduate Advisor for Admissions
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Graduate Advisor for Program Studies
Linda McQuaid
248 Fine Arts
817.272.2485
mcquaid@uta.edu

Graduate Faculty
Professors
Ling-Tam, Powell, Burton

Associate Professors
Bogard, Chave, Espinosa, Hunt, Ishii, Jessup, Kim, Lange, Morrow, Solomons, Stotter, Varner, Wiley

Assistant Professors
Baker, Castro, Cavanagh, Savage, Walvoord

Objectives

The Master of Music in Music Education curriculum is designed to impart the knowledge needed to facilitate successful careers and encourage personal development. Through further education, music teachers will become more articulate, reflective practitioners so that they are able to select, adapt, adjust, and assess teaching and learning expectations.

More specifically, the aims of the degree are to:

- improve teaching skills through advanced coursework and research;
- offer graduate courses to improve general musicianship, including performance, theory, and music history;
- prepare students to enter graduate programs leading to the doctoral degree;
- offer highly specialized courses for students interested in researching historical, education or artistic areas;
- provide advanced courses for qualified members of the community.

The intention of the Certificate in Performance is to provide graduate level instruction to performers interested in professional development. Specific outcomes of the program include improving the technical ability of performers, raising artistic performance level, and expanding repertoire, including excerpt work for orchestra instrumental majors.

Degree Requirements

Master of Music in Music Education

The program is designed for the student who has a bachelor's degree in music or its demonstrated equivalent and wishes to enhance knowledge in the field of music education. The Graduate Advisor for program studies will counsel the student in correcting deficiencies and selecting courses for the student's degree program. A minimum of 30 semester hours is required if the student chooses to write a thesis. If the student chooses not to write a thesis, a minimum of 36 semester hours is required. Advisory examinations in music history and written theory will be administered to all students prior to enrollment or during their first semester as a degree-seeking student.

Coursework for the program includes 15 core hours: Form and Style Analysis (MUSI 5301); one class from Selected Topics in Music History (MUSI 5308); Philosophical Foundations of Music Education (MUSI 5351); and Psychological Foundations of Music Education (MUSI 5352); and Research in Music Education (MUSI 5363). Students following the thesis option will take three hours of music education electives and an additional six hours of free choice electives. Students following the non-thesis option will take six hours of music education electives and an additional 12 hours of free choice electives.

Music education electives may be chosen from the following: Selected Topics in Music Pedagogy (MUSI 5350); Current Trends in Music Education (MUSI 5331); Selected Topics in Music Literature (MUSI 5354); Rehearsal Techniques (MUSI 5355); Advanced Diction for Singers (MUSI 5359); Advanced Technology for Musicians (MUSI 5350); Elementary Music (MUSI 5361); and Historical Foundations and Curricular Trends in Music Education (MUSI 5364). Free choice electives may be selected from ensembles, private instruction, music history, music theory, jazz studies and repeated special topics courses. Up to six hours of graduate credit from other disciplines may be considered if relevant to the degree, subject to approval by the Graduate Studies Committee. Students following the non-thesis op-

tion will enroll in at least one semester of Project in Music Education (MUSI 5353). Students who choose to write a thesis (MUSI 5398, 5698) will work closely with one or more members of the graduate faculty from the Department of Music on a research project in a specialized area of interest within the music education field.

Certificate in Performance

The Certificate in Performance requires 15 hours of coursework: nine hours of applied study (MUSI 5392), a three-credit-hour recital (MUSI 5391) and three hours of electives that may include participation in departmental ensembles/keyboard accompaniment (MUSI 5191/5170) or instruction in literature, pedagogical studies or orchestral excerpts (MUSI 5354/5350/5391).

Admission

The Department of Music has the following requirements for entry into the Master of Music in Music Education Degree.

Unconditional Admission

Requirements for unconditional admission into the program are:

- Three letters of recommendation speaking to the student's potential for success from references familiar with the student's academic background.
- A minimum 3.0 GPA in the last 60 hours of undergraduate work as calculated by the Graduate School.
- Bachelor's degree in music or its demonstrated equivalent (such as a music conservatory degree, a bachelor's degree in some other discipline with substantial undergraduate hours in music, etc.)

All admission criteria will be considered equally. Students meeting all three criteria will be granted automatic unconditional admission.

Probationary Status

A student meeting two out of three criteria and showing promise for successful graduate study may still be admitted on probationary status upon the recommendation of the Graduate Studies Committee. Within probationary status, said student will be admitted unconditionally into the degree program upon completion of 12 hours of graduate study with no grade lower than a B.

Provisional Admission

An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission.

Deferred Admission

A deferred decision may be granted when a file is incomplete or when a denied decision is not appropriate.

Admission will be denied for students not meeting at least two of the three criteria. Applicants may reapply for admission if the deficiencies in credentials that led to denial are remedied.

Certificate Admission Requirements

Students wishing to enroll only in the certificate program but not a graduate degree program may apply for admission to UT Arlington as a special student (non-degree seeking). Admission requires a bachelor's degree or equivalent and would be contingent upon an audition for a minimum of two faculty members; GRE scores and letters of recommendation are not required. Students in this certificate program who later seek graduate degrees at UT Arlington may apply 12 hours of certificate coursework within six years of completion and award of the certificate, if they meet the admission requirements for the graduate degree and receive approval from the appropriate Graduate Studies Committee and the Dean of Graduate Studies. Admission as a special student in no way guarantees subsequent unconditional admission into a graduate program or into the Graduate School.

Fellowships

Fellowships, when available, will be awarded on a competitive basis. Nominees for the Graduate School Master's Fellowship in Music will be selected based on the following criteria:

- Candidates must be new students entering in the fall semester, with a minimum of 6 hours of enrollment in both long semesters to retain their fellowships.
- The minimum undergraduate GPA requirement is 3.00, as calculated by the Graduate School, plus a GPA of 3.0 for any graduate credit hours.
- Transcript of a completed bachelor's degree in music from an accredited institution (or its demonstrated equivalent).
- Three letters of recommendation
- A written statement explaining the applicant's reasons for graduate study in music.

Final Master's Examination

A final program examination is required of all Master's degree candidates. A final Master's examination may result in:

- An unconditional pass with a recommendation to the Graduate Dean that the candidate be certified to receive the degree.
- A conditional pass with the requirement that additional conditions be met, which may include further work on the thesis or thesis substitute, additional coursework with a minimum specified grade point average or both (in all cases the final master's examination must be repeated within a specified period).
- Failure, with permission to be re-examined within a specified period; or
- Failure, with recommendation to the Dean of Graduate Studies that the candidate be dismissed from the program. The Music Department limits to 2 the number of times the examination can be taken.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In

the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Music (MUSI)

5100. WIND SYMPHONY (1-0). The schedule of classes indicates which ensembles are offered each semester. Prerequisite: Approval of the ensemble director.

5101. SYMPHONIC WINDS (1-0). The schedule of classes indicates which ensembles are offered each semester. Prerequisite: Approval of the ensemble director.

5102. A CAPELLA CHOIR (1-0). The schedule of classes indicates which ensembles are offered each semester. Prerequisite: Approval of the ensemble director.

5103. CHAMBER SINGERS (1-0). The schedule of classes indicates which ensembles are offered each semester. Prerequisite: Approval of the ensemble director.

5104. UNIVERSITY SINGERS (1-0). The schedule of classes indicates which ensembles are offered each semester. Prerequisite: Approval of the ensemble director.

5105. MUSIC THEATRE/OPERA LAB (1-0). The schedule of classes indicates which ensembles are offered each semester. Prerequisite: Approval of the ensemble director.

5106. KEYBOARD ENSEMBLE (1-0). The schedule of classes indicates which ensembles are offered each semester. Prerequisite: Approval of the ensemble director.

5107. JAZZ ORCHESTRA (1-0). The schedule of classes indicates which ensembles are offered each semester. Prerequisite: Approval of the ensemble director.

5108. JAZZ ENSEMBLE (1-0). The schedule of classes indicates which ensembles are offered each semester. Prerequisite: Approval of the ensemble director.

5109. VOCAL JAZZ (1-0). The schedule of classes indicates which ensembles are offered each semester. Prerequisite: Approval of the ensemble director.

5110. JAZZ COMBO (1-0). The schedule of classes indicates which ensembles are offered each semester. Prerequisite: Approval of the ensemble director.

5111. ORCHESTRA (1-0). The schedule of classes indicates which ensembles are offered each semester. Prerequisite: Approval of the ensemble director.

5120. PRIVATE LESSONS IN VOICE (1-0). This course provides private instruction in voice. This course may be repeated for credit as often as course content changes.

5121. PRIVATE LESSONS IN PIANO (1-0). This course provides private instruction in piano. This course may be repeated for credit as often as course content changes.

5122. PRIVATE LESSONS IN ORGAN (1-0). This course provides private instruction in organ. This course may be repeated for credit as often as course content changes.

5123. PRIVATE LESSONS IN HARPSICHORD (1-0). This course provides private instruction in harpsichord. This course may be repeated for credit as often as course content changes.

5124. PRIVATE LESSONS IN JAZZ PIANO (1-0). This course provides private instruction in jazz piano. This course may be repeated for credit as often as course content changes.

5125. PRIVATE LESSONS IN VIOLIN (1-0). This course provides private instruction in violin. This course may be repeated for credit as often as course content changes.

5126. PRIVATE LESSONS IN VIOLA (1-0). This course provides private instruction in violin. This course may be repeated for credit as often as course content changes.

5127. PRIVATE LESSONS IN CELLO (1-0). This course provides private instruction in cello. This course may be repeated for credit as often as course content changes.

5128. PRIVATE LESSONS IN BASS (1-0). This course provides private instruction in bass. This course may be repeated for credit as often as course content changes.

5129. PRIVATE LESSONS IN JAZZ BASS (1-0). This course provides private instruction in jazz bass. This course may be repeated for credit as often as course content changes.

5130. PRIVATE LESSONS IN GUITAR (1-0). This course provides private instruction in guitar. This course may be repeated for credit as often as course content changes.

5131. PRIVATE LESSONS IN CLARINET (1-0). This course provides private instruction in clarinet. This course may be repeated for credit as often as course content changes.

5132. PRIVATE LESSONS IN OBOE (1-0). This course provides private instruction in oboe. This course may be repeated for credit as often as course content changes.

5133. PRIVATE LESSONS IN FLUTE (1-0). This course provides private instruction in flute. This course may be repeated for credit as often as course content changes.

5134. PRIVATE LESSONS IN SAXOPHONE (3-0). This course provides private instruction in saxophone. This course may be repeated for credit as often as course content changes.

5135. PRIVATE LESSONS IN BASSOON (1-0). This course provides private instruction in bassoon. This course may be repeated for credit as often as course content changes.

5136. PRIVATE LESSONS IN TRUMPET (1-0). This course provides private instruction in trumpet. This course may be repeated for credit as often as course content changes.

5137. PRIVATE LESSONS IN FRENCH HORN (1-0). This course provides private instruction in trumpet. This course may be repeated for credit as often as course content changes.

5138. PRIVATE LESSONS IN TROMBONE (1-0). This course provides private instruction in trombone. This course may be repeated for credit as often as course content changes.

5139. PRIVATE LESSONS IN TUBA (1-0). This course provides private instruction in tuba. This course may be repeated for credit as often as course content changes.

5140. PRIVATE LESSONS IN EUPHONIUM (1-0). This course provides private instruction in euphonium. This course may be repeated for credit as often as course content changes.

5191. CONFERENCE COURSE IN MUSIC (1-0). Special problems in music. Topic may change from semester to semester. May be repeated for credit. Prerequisite: permission of instructor and Graduate Advisor.

5220. PRIVATE LESSONS IN VOICE (2-0). This course provides private instruction in voice. This course may be repeated for credit as often as course content changes.

5221. PRIVATE LESSONS IN PIANO (2-0). This course provides private instruction in piano. This course may be repeated for credit as often as course content changes.

5222. PRIVATE LESSONS IN ORGAN (2-0). This course provides private instruction in organ. This course may be repeated for credit as often as course content changes.

5223. PRIVATE LESSONS IN HARPSICHORD (2-0). This course provides private instruction in harpsichord. This course may be repeated for credit as often as course content changes.
5224. PRIVATE LESSONS IN JAZZ PIANO (2-0). This course provides private instruction in jazz piano. This course may be repeated for credit as often as course content changes.
5225. PRIVATE LESSONS IN VIOLIN (2-0). This course provides private instruction in violin. This course may be repeated for credit as often as course content changes.
5226. PRIVATE LESSONS IN VIOLA (2-0). This course provides private instruction in viola. This course may be repeated for credit as often as course content changes.
5227. PRIVATE LESSONS IN CELLO (2-0). This course provides private instruction in cello. This course may be repeated for credit as often as course content changes.
5228. PRIVATE LESSONS IN BASS (2-0). This course provides private instruction in bass. This course may be repeated for credit as often as course content changes.
5229. PRIVATE LESSONS IN JAZZ BASS (2-0). This course provides private instruction in jazz bass. This course may be repeated for credit as often as content changes.
5230. PRIVATE LESSONS IN GUITAR (2-0). This course provides private instruction in guitar. This course may be repeated for credit as often as course content changes.
5231. PRIVATE LESSONS IN CLARINET (2-0). This course provides private instruction in clarinet. This course may be repeated for credit as often as course content changes.
5232. PRIVATE LESSONS IN OBOE (2-0). This course provides private instruction in oboe. This course may be repeated for credit as often as course content changes.
5233. PRIVATE LESSONS IN FLUTE (2-0). This course provides private instruction in flute. This course may be repeated for credit as often as course content changes.
5234. PRIVATE LESSONS IN SAXOPHONE (2-0). This course provides private instruction in saxophone. This course may be repeated for credit as often as course content changes.
5235. PRIVATE LESSONS IN BASSOON (2-0). This course provides private instruction in bassoon. This course may be repeated for credit as often as course content changes.
5236. PRIVATE LESSONS IN TRUMPET (2-0). This course provides private instruction in trumpet. This course may be repeated for credit as often as course content changes.
5237. PRIVATE LESSONS IN FRENCH HORN (2-0). This course provides private instruction in French Horn. This course may be repeated for credit as often as course content change.
5238. PRIVATE LESSONS IN TROMBONE (2-0). This course provides private instruction in trombone. This course may be repeated for credit as often as course content changes.
5239. PRIVATE LESSONS IN TUBA (2-0). This course provides private instruction in tuba. This course may be repeated for credit as often as course content changes.
5240. PRIVATE LESSONS IN EUPHONIUM (2-0). This course provides private instruction in euphonium. This course may be repeated for credit as often as course content changes.
5241. PRIVATE LESSONS IN PERCUSSION (2-0). This course provides private instruction in percussion. This course may be repeated for credit as often as course content changes.
5242. PRIVATE LESSONS IN IMPROVISATION (2-0). This course provides private instruction in improvisation. This course may be repeated for credit as often as course content changes.
5291. CONFERENCE COURSE IN MUSIC (2-0). Special problems in music. Topic may change from semester to semester. May be repeated for credit. Prerequisite: permission of instructor and Graduate Advisor.
5301. FORM AND STYLE ANALYSIS (3-0). A survey of the forms and styles of Western art music employing relevant analytical techniques.
5302. THEORY AND COMPOSITION SPECIAL TOPICS (3-0). This course covers topics which vary from semester to semester, and includes in-depth study of selected topics in music theory. This course may be repeated for credit as often as the content changes. (Formerly MUSI 5330.)
5308. MUSIC HISTORY SELECTED TOPICS (3-0). This course will consist of an in-depth study of a particular genre, composer, or period. It may be repeated as the course content changes.
5320. PRIVATE LESSONS IN VOICE (3-0). This course provides private instruction in voice. This course may be repeated for credit as often as course content changes.
5321. PRIVATE LESSONS IN PIANO (3-0). This course provides private instruction in piano. This course may be repeated for credit as often as course content changes.
5322. PRIVATE LESSONS IN ORGAN (3-0). This course provides private instruction in organ. This course may be repeated for credit as often as course content changes.
5323. PRIVATE LESSONS IN HARPSICHORD (3-0). This course provides private instruction in harpsichord. This course may be repeated for credit as often as course content changes.
5324. PRIVATE LESSONS IN JAZZ PIANO (3-0). This course provides private instruction in jazz piano. This course may be repeated for credit as often as course content changes.
5325. PRIVATE LESSONS IN VIOLIN (3-0). This course provides private instruction in violin. This course may be repeated for credit as often as course content changes.
5326. PRIVATE LESSONS IN VIOLA (3-0). This course provides private instruction in viola. This course may be repeated for credit as often as course content changes.
5327. PRIVATE LESSONS IN CELLO (3-0). This course provides private instruction in cello. This course may be repeated for credit as often as course content changes.
5328. PRIVATE LESSONS IN BASS (3-0). This course provides private instruction in bass. This course may be repeated for credit as often as course content changes.
5329. PRIVATE LESSONS IN JAZZ BASS (3-0). This course provides private instruction in jazz bass. This course may be repeated for credit as often as course content changes.
5332. PRIVATE LESSONS IN OBOE (3-0). This course provides private instruction in oboe. This course may be repeated for credit as often as course content changes.
5333. PRIVATE LESSONS IN FLUTE (3-0). This course provides private instruction in flute. This course may be repeated for credit as often as course content changes.
5334. PRIVATE LESSONS IN SAXOPHONE (3-0). This course provides private instruction in saxophone. This course may be repeated for credit as often as course content changes.
5335. PRIVATE LESSONS IN BASSOON (3-0). This course provides private instruction in bassoon. This course may be repeated for credit as often as course content changes.
5336. PRIVATE LESSONS IN TRUMPET (3-0). This course provides private instruction in trumpet. This course may be repeated for credit as often as course content changes.
5337. PRIVATE LESSONS IN FRENCH HORN (3-0). This course provides private instruction in French Horn. This course may be repeated for credit as often as course content changes.

5338. PRIVATE LESSONS IN TROMBONE (3-0). This course provides private instruction in trombone. This course may be repeated for credit as often as course content changes.

5339. PRIVATE LESSONS IN TUBA (3-0). This course provides private instruction in tuba. This course may be repeated for credit as often as course content changes.

5340. PRIVATE LESSONS IN EUPHONIUM (3-0). This course provides private instruction in euphonium. This course may be repeated for credit as often as course content changes.

5341. PRIVATE LESSONS IN PERCUSSION (3-0). This course provides private instruction in percussion. This course may be repeated for credit as often as course content changes.

5342. PRIVATE LESSONS IN IMPROVISATION (3-0). This course provides private instruction in improvisation. This course may be repeated for credit as often as course content changes.

5343. PRIVATE LESSONS IN GUITAR (3-0). This course provides private instruction in guitar. This course may be repeated for credit as often as course content changes.

5344. PRIVATE LESSONS IN CLARINET (3-0). This course provides private instruction in clarinet. This course may be repeated for credit as often as course content changes.

5350. SELECTED TOPICS IN MUSIC PEDAGOGY (3-0). This course covers topics which vary from semester to semester and includes studies of teaching techniques applied to pre-K, elementary grades, the junior high school, the high school, the junior college, and the college or university. This course may be repeated for credit as often as the content changes.

5351. PHILOSOPHICAL FOUNDATIONS OF MUSIC EDUCATION (3-0). Study in the philosophy of music education.

5352. PSYCHOLOGICAL FOUNDATIONS OF MUSIC EDUCATION (3-0). A study of the psychological foundations of music education. An investigation of topics such as perception of and responses to music, the nature of musical attributes, music learning, and the measurement of musical behavior.

5353. PROJECT IN MUSIC EDUCATION (3-0). For students enrolled in the non-thesis option. Offers the opportunity to complete a professional project in music education relevant to the student's background, interest, and/or needs. The project should include, but not necessarily be limited to, appropriate written documentation. May be repeated for credit, but not more than 3 hours will apply to the Master of Music degree. Enrollment is required each term in which the project is in progress.

5354. SELECTED TOPICS IN MUSIC LITERATURE (3-0). This course covers topics which vary from semester to semester and includes studies in musical literature for the following: 1) Wind Band Literature; 2) Orchestral Literature; 3) Choral Literature; 4) World Music Literature; 5) Jazz Literature. This course may be repeated for credit as often as the content changes.

5355. REHEARSAL TECHNIQUES (3-0). A study of rehearsal techniques, including tone development, phrasing, rehearsal score study, and rehearsal organization. Topics, which may vary by semester, are 1) Choral; 2) Instrumental; 3) Jazz. May be repeated for credit when topics vary. Topics may be taken concurrently.

5359. ADVANCED DICTION FOR SINGERS (3-0). A study of performance diction for singers and the pronunciation of the language as it applies to public performance. Topics include English, French, Italian, and German. May be repeated for credit when topics vary.

5360. ADVANCED TECHNOLOGY FOR MUSICIANS (0-3). Intensive and extensive student-centered study topics to be selected from MIDI sequencing, multimedia development, advanced music notation and digital sampling and synthesis.

5361. ELEMENTARY MUSIC (3-0). A study of current methods and materials used in teaching elementary music. Classroom instruments are also studied.

5363. RESEARCH IN MUSIC EDUCATION (3-0). An introduction to historical, philosophical, descriptive, and experimental research in music education, and present research practices in music education.

5364. HISTORICAL FOUNDATIONS AND CURRICULAR TRENDS IN MUSIC EDUCATION (3-0). A study of the historical foundations of music education and curricular trends that provide the context for contemporary music education.

5365. MEANING AND REPRESENTATION IN MUSIC (3-0). This course will explore the basic questions of meaning in music, including the question of whether or not music can truly have meaning at all. Students will explore various philosophical, scientific, and musical (i.e., from composers and performers) viewpoints through readings, discussion, and writing.

5391. CONFERENCE COURSE IN MUSIC (3-0). Special problems in music. Topic may change from semester to semester. May be repeated for credit. Prerequisite: Permission of instructor and Graduate Advisor.

5393. CONDUCTING (3-0). Applied lessons in conducting. This course is an in-depth study of conducting technique as applied to choral or instrumental ensembles. It may be repeated for credit as the content changes.

5398. THESIS (3-0). The graduate student must be registered for 5398 when in consultation over the thesis with the advisor or supervisory committee.

5698. THESIS (6-0). The graduate student must be registered for 5698 in the semester or term in which the Master of Music degree will be conferred.

Objective

The Philosophy and Classical Studies Programs at UT Arlington actively participate in the cooperative philosophy Ph.D. program with the University of North Texas and in the Graduate Humanities M.A. Program at UT Arlington. Our graduate course offerings in philosophy and in classics also support other graduate programs, particularly those in the humanities disciplines and in the social sciences at UT Arlington. These courses provide inter alia the theoretical background necessary to the complete understanding and use of professional skills in such ancillary areas.

The Cooperative Philosophy Doctoral Program

The Ph.D. program in philosophy at the University of North Texas is a cooperative one between UNT and the Philosophy Program at UT Arlington, drawing upon the expertise of the faculty of both institutions. Students apply for admission to the Ph.D. program through the degree granting institution, UNT. Upon admission, students are able to register for graduate courses at either participating institution and to make use of the academic resources available at either institution. Students are required to complete a minimum of 15 graduate semester credit hours at each participating institution. See the online Student Handbook for the Program (**www.uta.edu/philosophy/PhDhandbook.htm**) and, also, visit the web page of UNT's Department of Philosophy and Religion Studies (**www.phil.unt.edu/programs/graduate**). For more information, contact Professor Robert Frodeman (frodeman@unt.edu) at the University of North Texas.

The Graduate Humanities Master's Program

Through the Graduate Humanities Program, UT Arlington offers courses of study leading to the Master of Arts in the Humanities. These courses of study are designed to instill understandings across the spectrum of those fields traditionally identified as "the humanities." The Graduate Humanities program is not suited for those wishing to pursue a traditional disciplinary degree, because its views, subject matter and methods transcend those normally allowed in a single discipline. It aims to integrate different disciplines within the humanities and to articulate connections across disciplinary boundaries. Coursework and examinations reflect the methods and perspectives of the humanities. Philosophical Studies is a possible area of concentration within the Graduate Humanities Program.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Department of Philosophy and Humanities

www.uta.edu/philosophy

Area of Study and Degrees

Humanities

M.A.
(See Program in Humanities)

Philosophy

Ph.D.
(See Cooperative Program with the University of North Texas on this page)

Chair

Charles Nussbaum
305 Carlisle Hall
817.272.2764

Graduate Faculty

Associate Professors

Baker, Burgess-Jackson, Chiasson, Nussbaum, Reeder

Assistant Professor

Byrd

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Philosophy (PHIL)

5391. CONFERENCE COURSE IN PHILOSOPHY (3-0). May be taken only with the permission of the instructor and Graduate Advisor.

5392. TOPICS IN THE HISTORY OF PHILOSOPHY (3-0). Consideration in depth of the work of a single philosopher or a related philosophical school against the background of the development of philosophy. May be repeated for credit as the topic changes.

5393. PHILOSOPHICAL PERSPECTIVES ON THE HUMANITIES (3-0). A philosophical inquiry into problems and issues of relevance in humanistic disciplines. May be repeated for credit as the topic changes.

6389. SEMINAR IN PHILOSOPHICAL ANALYSIS (3-0). Seminar-style treatment of some major problem in contemporary philosophy. May be repeated for credit as the topic changes.

6394. TOPICS IN SYSTEMATIC PHILOSOPHY (3-0). In-depth treatment of an issue or issues in metaphysics, epistemology, ethics, aesthetics or related subdisciplinary areas. May be repeated for credit as the topic changes.

Greek (GREK)

5391. CONFERENCE COURSE IN GREEK (3-0). May be taken only with the permission of the instructor and the Graduate Advisor.

Latin (LATN)

5301. INTENSIVE LATIN FOR READING I (3-0). Covers approximately the same material as LATN 1441/1442 (Levels I and II).

5302. INTENSIVE LATIN FOR READING II (3-0). Covers approximately the same material as LATN 2313/2314 (Levels III and IV).

5391. CONFERENCE COURSE IN LATIN (3-0). May be taken only with the permission of the instructor and the Graduate Advisor.

Classics (CLAS)

5392. TOPICS IN CLASSICAL STUDIES (3-0). Studies in the social, political and cultural systems of the ancient Greeks and Romans, including their influence upon subsequent societies. May be repeated for credit as the topic changes.

Objective

The program leading to a Master of Arts degree in Political Science emphasizes preparation for service in many areas of our national life, both public and private. Students interested in careers in teaching and research or in leadership roles in the public or private sectors may pursue programs adapted to their individual objectives. The Department of Political Science endeavors to equip students with the research techniques and substantive background for coursework undertaken beyond the master's level. Particular attention is given to newer methodologies and approaches employed by scholars in the field.

Admissions and Fellowship Criteria

The program is committed to a holistic admissions approach. As a result, admissions criteria include: grade point averages, letters of recommendation, personal statements, advanced degrees, leveling courses, graduate courses taken as a degreed student or in another program, and professional work experience. The major purpose of the admissions criteria is to promote access to our program, but maintain standards that will enable the department to determine if the applicant demonstrates the requisite skill level to master the requirements of the program.

Applicants are required to submit an official transcript(s), three (3) letters of recommendation, and a personal statement, and have taken a minimum of 18 hours of political science classes. The department will review the application package in its entirety. The package is evaluated to determine if a student has achieved a 3.0 grade point average (GPA) in the last 60 hours of their undergraduate work as calculated by the Graduate School, and meets other admission requirements. If a student has already earned an advanced degree, the department will evaluate the student's academic performance in obtaining that degree equally with the undergraduate performance. International students must meet the standard (550) on the TOEFL examination.

Given the above standards, the department has established the following guidelines regarding admission status:

- If the GPA is 3.00 or greater and the remainder of the application package is satisfactory, then the student would be admitted to our graduate program unconditionally.
- If the GPA is between 2.70 and 2.99 and the remainder of the application package is satisfactory, then the student would be admitted to our graduate program on probationary status (discussed below).
- If the GPA is between 2.50 and 2.69, the student was an undergraduate political science major with a GPA in political science classes of 3.00 or greater, and the remainder of the application package is satisfactory, then the student would be admitted to our graduate program on probationary status (discussed below).
- If the GPA is between 2.50 and 2.69, the student does not satisfy the criteria set forth in the clause (3) above, and the remainder of the application package is satisfactory, then the student's admission decision will be deferred and he/she will be required to take leveling classes (discussed below).

Deferral and Denial

Students with unsatisfactory admissions materials (regardless of GPA) will be deferred until they provide satisfactory materials. If they do not do so, they will be denied admission.

Department of Political Science

www.uta.edu/pols/pols.htm

Areas of Study and Degrees

Political Science
M.A.
Public Administration
M.P.A.
(See School of Urban and Public Affairs)
Humanities
M.A.
(See Program in Humanities)

Master's Degree Plans

Thesis and Non-Thesis

Chair

Rebecca Deen
206 University Hall
817.272.2991

Graduate Advisor

Dale Story
449 University Hall
817.272.3994

Graduate Faculty

Professors
Cichock, Cole, Gutierrez, Ignagni, Hekman, Marshall, Story

Associate Professors
Clark, Deen, Farrar-Myers, Ignagni, Knerr, Moon, Moore, Simowitz

Assistant Professor
Boyea

Minimum 18 Undergraduate Hours in Political Science

Students without 18 undergraduate hours in political science or the equivalent (as determined by the Graduate Advisor) will be required to take undergraduate courses to meet this deficiency. Once they complete these courses satisfactorily, students will be admitted on probation. Courses must be approved by the Graduate Advisor and only courses with a "B" or better will count toward this requirement. These courses will not count toward a graduate degree. Students who do not complete the 18-hour (or equivalent) requirement with the required grades will be denied admission.

Provisional Admission

An applicant unable to supply all required documentation prior to the admission deadline, but who otherwise appears to meet admission requirements, may be granted provisional admission.

Probationary Status

Being admitted on probationary status means that the student will be able to take graduate level classes in their first semester after being admitted, but must earn a grade of "A" or "B" in each class during their first 12 hours of graduate coursework in the department. This regulation will be strictly enforced.

Grade Points 2.5-2.69

Students with a GPA of 2.5 to 2.69 and who were undergraduate political science majors with a GPA in political science classes of 3.0 or better will be admitted on probation.

All others who have an overall GPA between 2.5 and 2.69 will have their admission deferred and be required to take up to 18 hours of undergraduate leveling courses approved by the Graduate Advisor. Students must complete each of these courses with a grade of "B" or better or they will be denied admission. This option involves considerable time and cost for a student, and none of the courses will be counted toward a graduate degree. Students are responsible for contacting the Graduate Advisor regarding this option and seeking prior approval for courses taken at UT Arlington or another university. If a student drops a leveling course, he/she must re-enroll and complete the course. No substitute courses will be approved. Students are responsible for gaining admission to the program to take leveling courses. If a student successfully completes the leveling course requirement, admission to the graduate program will be probationary. If the student does not complete the leveling course requirement, admission will be denied.

Fellowships

Fellowships, when available, will be awarded on a competitive basis. Nominees for the Graduate School Master's Fellowship in the Political Science master's program will be selected based on the following criteria:

- Candidates must be new students entering in the fall semester, with a minimum of 6 hours of enrollment in both long semesters to retain their fellowships.
- The minimum undergraduate GPA requirement is 3.00, as calculated by the Graduate School, plus a GPA of 3.0 for any graduate credit hours.
- Transcript of a completed bachelor's degree in Political Science (or appropriate related field) from an accredited institution.
- Three letters of recommendation. These letters may be the same submitted for admission.
- A written statement explaining the applicant's reasons for graduate study in Political Science.

Degree Requirements

The thesis degree plan requires 24 hours of coursework including three hours of methods in Political Science for those who have not had POLS 3310 or its equivalent. Of the remaining 21 hours, at least one course each must be taken from four of the following six areas:

Political Behavior and Processes—5300, 5311, 5391.
Comparative Politics—5303, 5312, 5391.
International Politics and Organization—5312, 5391.
Public Law and Jurisprudence—5301, 5313, 5391.
Public Administration and Policy Studies—5302, 5314, 5391.
Political Theory (Thought and Methodology)—5310, 5391.

Students should consult the Political Science Graduate Student Handbook for regulations on transfer courses, undergraduate courses, conferences, internships, and special courses. It is recommended that students complete at least one general field seminar (5300, 5301, 5302, 5303) prior to taking the topics courses. See the Graduate Advisor for more detail.

The non-thesis degree plan requires a minimum of 36 hours, including three hours of methodology, and courses from four of the six areas.

All candidates for the degree of Master of Arts with a major in political science must pass a final comprehensive examination, written, oral, or both written and oral. The scope, content, and form of the examination will be determined by the student's supervising committee. In the event of failure of the final comprehensive examination, the student may petition the Committee on Graduate Studies to retake the examination on a date no sooner than 60 days after the first examination. Students will not be permitted more than one reexamination after failure of the initial examination.

International Studies Option

The International Studies option of the Master of Arts program in Political Science emphasizes comparative politics and international politics within the framework of Political Science. This option requires courses from three of six areas of Political Science and 12 hours in comparative politics and/or international politics. Students must have three hours of a methods course.

U.S. Political Institutions and Processes Option

The U.S. Political Institutions and Processes option of the Master of Arts program in Political Science emphasizes political behavior and processes and public law and jurisprudence within the framework of political science. This option requires courses from three of six areas of Political Science and 12 hours in political behavior and processes and/or public law and jurisprudence. Students must have three hours of a methods course.

Master of Public Administration

The Department of Political Science participates in the interdisciplinary Master of Public Administration along with the School of Urban and Public Affairs (see the School of Urban and Public Affairs, Program in Public Administration).

Dual Degree Program

Students in political science may participate in a dual degree program whereby they can earn a Master of Arts in political science and

a Master of Arts in criminal justice. By participating in a dual degree program, students can apply a number of semester hours jointly to meet the requirements of both degrees, thus reducing the total number of hours which would be required to earn both degrees separately. The number of hours which may be jointly applied ranges from nine to 18 hours, subject to the approval of Graduate Advisors from both programs. To participate in the dual degree program, students must make separate application to each program and must submit a separate program of work for each degree. Those interested in a dual degree program should consult the appropriate Graduate Advisor(s) for further information on course requirements. See also the statement on "Dual Degree Programs" in the general information section of this catalog.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Political Science (POLS)

5197. MASTER'S COMPREHENSIVE EXAMINATION (1-0). Required of all non-thesis Master of Arts students in the semester of their graduation. Graded P/F/R.

5300. U.S. NATIONAL POLITICAL INSTITUTIONS (3-0). This course focuses on the politics, processes and policies of American politics and is designed to expose students to a variety of topics and approaches. This course will be a survey of several subfields within American politics, including the presidency, Congress, courts, elections and voting behavior, public opinion, parties and interest groups.

5301. CONTEMPORARY JUDICIAL POLITICS AND BEHAVIOR (3-0). Process and decision- making of the American judiciary with emphasis on contemporary constitutional issues.

5302. TRENDS IN PUBLIC ADMINISTRATION AND POLICY MANAGEMENT (3-0). Recent literature in organizational theory, government restructuring, and policy management problems.

5303. COMPARATIVE POLITICAL SYSTEMS (3-0). Theories and concepts relating to the scope of comparative politics and methods of comparing various aspects of the political system.

5310. TOPICS IN THEORY AND METHODOLOGY (3-0). Empirical and normative theories for political analysis. 1. Empirical Theory and Research Methods 2. Normative Theory. (May be repeated for credit when topics vary.)

5311. TOPICS IN U.S. NATIONAL POLITICS: INSTITUTIONS, PROCESS AND BEHAVIOR (3-0). This course will focus on the specific aspects of the U.S. national governing institutions, processes, and behavior. A single aspect of U.S. politics will be examined in a given semester. Topics include the following: (May be repeated for credit when topics vary.) 1. Campaigns and Elections 2. Public Opinion 3. Parties and Interest Groups 4. Ethnic Groups and the Nation State 5. Women in the Political Process 6. Congressional Behavior 7. The Presidency 8. Separation of Powers 9. Special topics in the Presidency 10. Special topics in U.S. National Politics.

5312. TOPICS IN COMPARATIVE POLITICS AND INTERNATIONAL RELATIONS (3-0). Treatment of emerging and established nations, U.S. foreign policy and international relations. (May be repeated for credit when topics vary.) 1. Political Systems of Russia and Eastern Europe 2. The Politics of Asia and the Far East 3. The Politics of Constitutional Democracies 4. Latin American Politics 5. U.S.-Mexico Relations 6. U.S. Immigration Policy 7. Theories of International Conflict 8. Special Topics in Comparative Politics 9. Special Topics in International Relations.

5313. TOPICS IN PUBLIC LAW AND JURISPRUDENCE (3-0). The role of U.S. national and state courts in policy making, constitutional law, and the examination of the evolution and nature of law in the United States. (May be repeated for credit when topics vary.) 1. U.S. Supreme Court 2. Civil Rights and Liberties 3. Federalism 4. American Legal System 5. State Court Systems 6. Special Topics in Public Law.

5314. TOPICS IN PUBLIC ADMINISTRATION AND POLICY MAKING (3-0). U.S. national policy making and program management, state and urban policy making and administration. (May be repeated for credit when topics vary.) 1. Public Budgeting and Fiscal Policies 2. Energy and Environmental Politics and Policy 3. Health Care Politics and Policy Making 4. Public Policy Analysis 5. State and Local Politics and Policies (also offered as URPA 5204; credit will be granted only once) 6. Urban Administration 7. The Politics of Governmental Reform 8. U.S. Public Policy and the Mexican-American Community 9. Special Topics in Policy Making.

5391. CONFERENCE COURSE IN POLITICAL SCIENCE (3-0). Research and reading in a specialized field under the direction of a member of the graduate faculty. Graded P/F/W.

5398. THESIS (3-0). Original research designed to augment existing studies of problems or topics related to one of the major fields of study.

5698. THESIS (6-0). Original research designed to augment existing studies of problems or topics related to one of the major fields of study. 5398 graded R/F only; 5698 graded P/F/R.

Department of Sociology and Anthropology

www.uta.edu/sociology-anthropology

Areas of Study and Degrees

Sociology
M.A.
Anthropology
M.A.
Humanities
M.A.
(See Program in Humanities)

Master's Degree Plans

Thesis and Thesis Substitute/Internship (Anthropology only)
Thesis and Non-Thesis (Sociology only)

Chair

Robert L. Young
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Associate Chair

Karl M. Petruso
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Graduate Advisors

Sociology
Raymond Eve
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Anthropology
Shelley Smith
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slsmith@uta.edu

Graduate Faculty

Professors
Agger, Bastien, Eve, Petruso, Shelton, Smith, Weed, Young

Associate Professors
Baker, Dunn, Rouse

Assistant Professors
Baird, Brown, Jacobson, Khanduri, Kunovich, Zlolniski

Objectives: M.A. in Sociology

The Master of Arts program in sociology is designed to provide students with a firm substantive background in sociological theory and in the techniques of contemporary research methodology and statistical analyses. In addition to these core concerns, the program offers a variety of seminars, as well as practicum opportunities, to help prepare students for a wide range of professional careers in both the private and public sectors or continued graduate education at the Ph.D. level.

Admissions Requirements: Sociology

Applicants must apply for admission through, and supply all information required by, the Graduate School. The Sociology Graduate Advisor, in consultation with other members of the faculty, decides on each applicant.

All of the following criteria will be considered in determining program admission status:

1. undergraduate grade point average
2. Graduate Record Exam (GRE) scores
3. letters of recommendation from faculty
4. preparation in sociology and satisfactory performance in sociology courses and/or courses in related disciplines
5. statement of interest in graduate study in sociology

Criteria for Unconditional Admission

For unconditional admission, the student must satisfy each of the following criteria.

1. Minimum GPA of 3.0, as calculated by the Graduate School.
2. Preferred GRE score of at least 500 on the verbal and 500 on the quantitative.
3. Satisfactory letters of recommendation.
4. Adequate preparation in sociology and satisfactory performance in sociology courses and/or those in related disciplines.
5. Satisfactory statement of interest in graduate study in sociology.

Criteria for Probationary Admission

Students who do not qualify for unconditional admission may be admitted on probation if they satisfy any 4 of the 5 criteria for unconditional admission.

Those entering the program under probationary status will be granted unconditional admission only after completing 12 hours of graduate sociology courses, approved by the Graduate Advisor, earning no grade below a B.

Provisional Admission

An applicant unable to supply all required information prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission.

Deferred Admission

A deferred decision may be granted when a file is incomplete or when a denied decision is not appropriate.

Denied Admission

Applicants who do not satisfy the requirements for any of the aforementioned forms of admission will not be admitted.

International Students

To qualify for admission, international students must score 550 or above on the TOEFL.

UT Arlington Sociology Undergraduate Majors

Sociology students who completed their undergraduate degree in Sociology at UT Arlington with a 3.0 overall GPA, a 3.0 GPA in advanced hours, a B or better in Sociological Theory (SOCI 3372 or 4311), Social Statistics (SOCI 3352) and Social Research (SOCI 3305 or 3462), and satisfactory letters of recommendation from UT Arlington faculty qualify for automatic unconditional admission, pending submission of all required materials.

Graduate Assistantships and Fellowships in Sociology

Graduate teaching and research assistantships, fellowships and other forms of financial support will be awarded on a competitive basis. In addition to performance in any graduate courses the student may have taken, the same criteria used to determine admission status will be used in evaluating applications for such awards. No single factor, including standardized test scores, will be used to end consideration of any graduate assistantships or fellowships.

Nominees for the Graduate School Master's Fellowship in Sociology will be selected based on the following criteria:

1. Candidates must be new students entering in the fall semester, with a minimum of 6 hours of enrollment in both long semesters, to retain their fellowships.
2. The minimum undergraduate GPA requirement is 3.0, as calculated by the Graduate School, plus a GPA of 3.0 for any graduate credit hours.
3. Transcript of a completed bachelor's degree in sociology (or appropriate related field) from an accredited institution.
4. Three letters of recommendation.
5. A written statement explaining the applicant's reasons for graduate study in sociology.

Degree Requirements: Sociology

Students may select from two options: the thesis or non-thesis degree plan.

Thesis Option: Satisfactory completion of a minimum of 24 hours of coursework, including core courses in theory, methods, and statistics, plus the six hour thesis.

Non-Thesis Option: Satisfactory completion of a minimum of 36 hours of coursework, of which at least 24 hours must be in the major area(s) of study, including core courses in theory, methods, and statistics, and SOCI 5385.

All candidates for the degree Master of Arts with a major in sociology must pass a final examination. For thesis candidates, it is the oral examination on the completed thesis. For non-thesis candidates, it is a comprehensive examination, the scope, content and form of which shall be determined by the student's supervising committee.

Dual Degree Program

Students in sociology may participate in a dual degree program where by they can earn a Master of Arts in Sociology and another field, such as Master of Public Administration or Master of Science in Social Work. By participating in a dual degree program, students can apply a number of semester hours jointly to meet the requirements of both degrees, thus reducing the total number of hours which would be required to earn both degrees separately. Six or more hours may be jointly applied depending on the total number of hours required for both degrees, and subject to the approval of graduate advisors from both programs.

To participate in the dual degree option, students must make separate application to each program and must submit a separate Program of Work for each program. Admission to and enrollment in the two programs must be concurrent (admitted to the second program before completing more than 24 hours in the first). Those interested should consult each of the appropriate graduate advisors for coursework requirements and refer to the Graduate School catalog entry on Dual Degree Program in the Advanced Degrees and Requirements section for further details.

Objectives: M.A. in Anthropology

The Anthropology M.A. program offers students a well-integrated curriculum in cultural anthropology, archaeology, and biological anthropology. It is intended both (1) for students who wish to prepare for admission to an anthropology Ph.D. program at another university, and (2) for those who wish to learn anthropological skills and perspectives to enhance their careers (in education, the helping professions, or other fields) in an increasingly diverse society.

Students may choose between a thesis option (30 credit hours), recommended for those planning to go on to a Ph.D. program, and a thesis substitute/internship option (36 credit hours, ordinarily including a three-hour practicum and ANTH 5370).

Admissions Requirements: Anthropology

The Graduate Advisor, in consultation with the rest of the Graduate Anthropology Faculty, determines the admission status of each applicant. No single criterion will either guarantee or deny acceptance into the program. Applicants must apply for admission through and supply all information required by the Graduate School.

The following information will be considered in determining program admission status:

1. Undergraduate Grade Point Average (GPA).
2. The verbal and quantitative portions of the Graduate Record Exam (GRE).
3. Three letters of recommendation, at least two of which must be from academic faculty.
4. Performance in anthropology classes as well as general academic performance.
5. Statement of purpose as it applies to specific interests in anthropology.
6. Writing sample (preferably an undergraduate research paper).

Criteria for Unconditional Admission

1. Minimum GPA of 3.0 for last 60 hours of undergraduate coursework.
2. Acceptable GRE scores; experience has shown that successful students have a verbal GRE score of 500 or higher and a quantitative GRE score of 500 or higher.
3. Acceptable letters of recommendation.
4. Acceptable statement of purpose.
5. Acceptable writing sample.
6. Successful completion of ANTH 2307, ANTH 2322, and ANTH 2339 or the equivalents thereof.

Note: For students with a B.A. in anthropology from UT Arlington, Unconditional Admission may be granted without the GRE if the following conditions are all met:

1. Minimum GPA of 3.0 overall.
2. Minimum GPA of 3.0 for last 60 hours of undergraduate coursework.
3. Minimum GPA of 3.5 in anthropology major courses.
4. Grades of A or B in ANTH 2307, ANTH 2322, and ANTH 2339.
5. Acceptable letters of recommendation.
6. Acceptable statement of purpose.
7. Acceptable writing sample.

Criteria for Probationary Admission

1. Minimum GPA of 3.0 for last 60 hours of undergraduate coursework.
2. Acceptable letters of recommendation.
3. Acceptable statement of purpose.
4. Acceptable writing sample.
5. Successful completion of at least two of ANTH 2307, ANTH 2322, and ANTH 2339 or the equivalents thereof.
6. Interview with a member of the Graduate Studies Committee.

Students admitted in probationary status must complete 12 hours of graduate work with no grade less than a B. Students who lack one of the three required 2000-level courses will enter in probationary status and must successfully complete the final 2000-level class during the first semester of probationary enrollment; the following semester they will achieve unconditional status if they meet the criteria listed above for unconditional admission.

Provisional Admission

Students are to be admitted provisionally only in cases where official documents are in process and unofficial ones are available. Applicants must meet all conditions of either unconditional or probationary admission status.

Decision on Admission Deferred

In cases of incomplete applications or in cases in which the applicant does not meet the criteria for other admission categories but nonetheless is judged by the Graduate Anthropology Faculty to show promise, a decision on admission may be deferred, with instructions provided to the student indicating the course of action to be taken prior to subsequent review.

Denial of Admission

Applicants who do not satisfy all the criteria for any of the above categories will be denied admission.

International Students

In addition to the above requirements, International Students need to have a minimum TOEFL score of 550.

Graduate Assistantships and Fellowships in Anthropology

Graduate teaching and research assistantships, fellowships, and other forms of financial support will be awarded on competitive basis. No single factor will be used as the basis for these awards; rather candidates' records will be evaluated in their entirety and support will be awarded to the best candidates based on the collective judgment of the Graduate Anthropology Faculty.

Nominees for the Graduate School Master's Fellowship in Anthropology will be selected based on the following criteria:

1. Candidates must be new students entering in the fall semester, with a minimum of 6 hours of enrollment in both long semesters to retain their fellowships.
2. The minimum undergraduate GPA requirement is 3.0, as calculated by the Graduate School, plus a GPA of 3.0 for any graduate hours.
3. Transcript of a completed bachelor's degree in Anthropology (or appropriate related field) from an accredited institution.
4. Three letters of recommendation.
5. A written statement explaining the applicant's reasons for graduate study in Anthropology.
6. The writing sample provided with the application to the program.
7. Acceptable GRE scores.

Degree Requirements: Anthropology

Thesis Option: Satisfactory completion of a minimum of 30 credit hours. Program must include 1) ANTH 5310; 2) ANTH 5351; 3) a 3 hour statistics course at either the graduate or undergraduate level, as specified by the student's committee; 4) 6 hours of methods (including ANTH 5315 or ANTH 5320, and ANTH 5325 or ANTH 5363; 5) 6 hours of thesis.

Thesis Substitute/Internship Option: Satisfactory completion of a minimum of 36 credit hours. Program must include 1-4 above, ANTH 5370, and ANTH 5371.

Archaeological Fieldwork

All graduate students concentrating in archaeology are strongly encouraged to have participated in an archaeological field school (for academic credit) or to have obtained equivalent excavation, survey, and/or laboratory experience before graduation. Students seeking placement on archaeological field projects should contact the faculty for guidance and recommendations pertinent to their goals and interests.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Sociology (SOCI)

Enrollment in graduate courses in sociology requires admission to the Graduate School or permission of the instructor.

Detailed descriptions of individual courses are available in the main office, Department of Sociology and Anthropology, 430 University Hall, Box 19599, or visit **www.uta.edu/sociology-anthropology**.

5191. CONFERENCE COURSE (1-0).

5301. SOCIOLOGICAL THEORY (3-0). A comprehensive review, analysis, and evaluation of the dominant conceptual perspectives, and their proponents, in sociological theory.

5303. RESEARCH DESIGN (2-2). Seminar on the design, plan, structure, and strategies of contemporary social research. Examines the interrelationships of theory, methods, and statistics along with the problems of measurement, sampling, scaling techniques, and the presentation of statistical data.

5304. SOCIAL STATISTICS I (2-2). Examines a variety of statistical methods including analysis of variance and covariance, multivariate regression models, multiple and partial correlations, factor analysis, and other contemporary parametric and nonparametric techniques. Emphasis is on the application of these methods to social science data.

5310.SEMINARS IN SOCIAL PSYCHOLOGY (3-0). Introduction and discussion of theoretical and methodological perspectives in social psychology. Focusing on particular domains of social life, these seminars examine fundamental processes of social interaction and the influence of social situations and social experience on the thought, feeling, and behavior of individuals. (May be repeated for credit when topics vary.)

5319. SEMINARS IN SOCIAL INSTITUTIONS AND CHANGE (3-0). Seminars in this area are concerned with the structure and change of the basic elements of society that represent ordered and regulated aspects of social life. Also examined are collective behavior and social movements which result from instability in institutional arrangements and represent efforts to enact social change. (May be repeated for credit when topics vary.)

5330. SEMINARS IN SOCIAL DIFFERENTIATION (3-0). In all human societies, perceptions of differences in individuals, social positions and groups arise and form a basis for social evaluation. Seminars in this area examine the processes involved in social differentiation, social evaluation, and resulting forms of social inequality. (May be repeated for credit when topics vary).

5341. SEMINARS IN THEORY AND RESEARCH METHODS (3-0). Research methods seminars address a variety of issues related to quantitative and qualitative approaches to data collection and analysis. Theory courses offer extended treatment of topics in theory and theory construction, reflecting systematic efforts to understand the nature and operation of human society and social behavior. (May be repeated for credit when topics vary.)

5385. NON-THESIS PROJECT (3-0). The topic and scope of the written project must be approved by the three graduate faculty members who will serve on the final Supervising Committee. A final oral presentation of the project is required.

5388. RESEARCH PRACTICUM/INTERNSHIP (3-0).

5389. TEACHING SOCIOLOGY (3-0). To learn strategies of coping with practical problems of teaching undergraduate sociology, students assist one or more professors in lecture preparation, grading, and examination construction. Not to be counted toward the degree requirement.

5392. CONFERENCE COURSE IN SOCIOLOGY (3-0).

5398. THESIS (3-0).

5698. THESIS (6-0).

Anthropology (ANTH)

5191. CONFERENCE COURSE (1-0).

5307. FORENSIC ANTHROPOLOGY (3-2). Estimating age, sex, race, stature, pathology, cause of death, and time since death from human remains. The role of skeletal biology and physical anthropology in criminal investigation. Case studies will be used to demonstrate application of the methods studied.

5310. HISTORY OF ANTHROPOLOGICAL THEORY (3-0). This course is a critical examination of major theoretical trends in ethnological theory, from mid-19th century to the present.

5315. ARCHAEOLOGICAL METHODS (3-0). An examination of research methods and underlying theory in archaeology and their evolution since the era of European antiquarianism. Origins and development of archaeology as a scholarly discipline. Emphasis on the period 1960-present; consideration of recent trends in analysis and reportage.

5317. ARCHAEOLOGY OF EXPLORATION (3-0). Archaeological evidence for travel in antiquity. Technology of travel (horse/camel, wheeled vehicles, boats) and related topics (navigation; development of trade and trade routes; nature of discovery, settlement and colonization in antiquity). Case studies drawn from ancient cultures of the Old World from the Stone Age through Medieval times.

5320. METHODS IN BIOLOGICAL ANTHROPOLOGY (3-0). This course covers several topical areas relevant to biological anthropologists specializing in human biology, including osteology and skeletal biology, skeletal maturation (both postcranial and craniofacial), growth and development from birth to biological maturity, and selected topics in forensics, anthropometry, physiology, nutrition, genetics, epidemiology, and demography.

5325. QUALITATIVE METHODS (3-0). Students do fieldwork in anthropology. Students practice participant observation, conduct an interview, collect a kinship chart, map blocks, collect life histories and participate in rituals. Course emphasizes methods of data collection, analysis/interpretation of data, and critical writing.

5340. EUROPEAN CULTURE AND SOCIETY (3-0). An exploration of anthropological studies of both Western and Eastern Europe. Traces the history of ethnography in Europe, from early community studies to recent work on institutions and political structures. Themes of cultural identity, nationalism, gender, and class will be addressed.

5342. ADVANCED ETHNOLOGY (3-0). Seminar based on student reports and critiques of assigned readings. Major emphasis on the areas of ethnology and social anthropology.

5344. CULTURES OF LATIN AMERICA (3-0). An ethnological comparison of societies and cultures in Central and South America. Emphasis on gender, ethnicity, and political economy.

5345. RELIGION AND CULTURE (3-0). An ethnological comparison of native religions to understand non-western belief systems. Emphasis on rituals, myths, totemic systems, taboos, and cosmology.

5346. MESOAMERICAN ARCHAEOLOGY (3-0). An examination of the diversities of several prehistoric Mesoamerican cultures including the Olmec, Maya, Teotihuacan, Zapotec, and the Aztec. Current issues including the beginnings of agriculture, early village life, the rise of complexity and the institution of kingship, warfare, and Mesoamerican ideology and cosmology will be addressed.

5349. TOPICS IN ANTHROPOLOGY (3-0). May be repeated for credit as the topic changes.

5351. EMERGENCE OF HUMANKIND (3-0). An intensive review of the evidence for, and main outlines of, human biological and cultural evolution up to agricultural origins.

5353.MEDICAL ANTHROPOLOGY (3-0). An examination of anthropological concepts for understanding curing practices and attitudes toward health programs in various cultures.

5355. HUNTERS AND GATHERERS (3-0). Cross-cultural approach to the ecological, social, and historical contexts of hunters, gatherers, and foragers.

5360 - ANTHROPOLOGY AND EDUCATION (3-0). The study of socialization and education in cross-cultural perspective. Themes include education and language, schooling and nationalism, multicultural education, childhood socialization, literacy, adult learning, and school culture.

5363. ETHNOGRAPHY AND PERSONAL NARRATIVE (3-0). Focus is on anthropology and autobiography, autoethnography, life history, and narrative constructions of selfhood in different cultural contexts. Development of the life history approach in ethnographic research. Methods in the collections and analysis of life stories.

5365. GLOBALIZATION AND TRANSNATIONAL MIGRATION (3-0). Traces the history of ethnographic studies of immigrants in Western and developing countries. Compares the contemporary experiences of immigrant groups in U.S. cities. Issues include work, traders and entrepreneurs, family and households, social networks, kinship and voluntary associations, modes of settlement, ethnic identity, political organization and cultural change.

5369. FOLKLORE AND MYTHOLOGY (3-0). Function, forms, and interpretation of folklore and myth in traditional societies; examination of oral literature as an expression of continuity and change; emphasis on a structural analysis of myth.

5370. APPLIED ANTHROPOLOGY (3-0). Explores the principles of cultural dynamics and the sources of cultural change in innovation and diffusion. Focuses particularly on the anthropological theories, methods, and findings relevant to problems of directed culture change, especially as illustrated by non-literate and peasant groups in contact with western civilization.

5371. RESEARCH PRACTICUM/INTERNSHIP (3-0).

5373. ARCHAEOLOGY FIELD SCHOOL (0-3). This course, conducted during the summer sessions, consists of on-site and classroom instruction in techniques of archaeological survey, excavation, laboratory, processing, and analysis. Students can receive either three or six hours of credit. Enrollment by permission of instructor only. Prior coursework in anthropology desirable but not necessary.

5389. TEACHING ANTHROPOLOGY (3-0). To learn strategies of coping with practical problems of teaching undergraduate anthropology, students confer with one or more professors to discuss preparing syllabi and lectures, constructing and evaluating examinations, etc. Not to be counted toward the degree requirement.

5392. CONFERENCE COURSE IN ANTHROPOLOGY (3-0).

5398. THESIS (3-0).

5406. HUMAN OSTEOLOGY (3-2). Detailed examination of human skeletal morphology. Topics include form and function of all skeletal elements in the human body, differentiation of each bone, left and right side identification, identification of fragmented remains, and muscle attachments and articulations. Content useful in forensic anthropology, archaeology, and hominid paleontology. If taken for undergraduate credit either as ANTH 4306 or ANTH 4406, cannot be repeated for graduate credit.

5673. ARCHAEOLOGY FIELD SCHOOL (0-6). This course, conducted during the summer sessions, consists of on-site and classroom instruction in techniques of archaeological survey, excavation, laboratory, processing, and analysis. Students can receive either three or six hours of credit. Enrollment by permission of instructor only. Prior coursework in anthropology desirable but not necessary.

5698. THESIS (6-0).

Objective

The graduate course offerings in theatre arts are provided to support other graduate degree programs and to meet the express needs of students. No program leading to a graduate degree in theatre arts exists at this time.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Theatre (THEA)

5393. TOPICS IN THEATRE ARTS (3-0). Special topics in theatre; offered periodically, with subject matter determined by instructor and student interest. Previous topics have included: Design Portfolio Workshop; Alternative Actor Training Workshop; Playwriting; Improvisation; and Styles in Acting.

Department of Theatre Arts

www.uta.edu/theatre/

Chair

Kim LaFontaine
144 Fine Arts
817.272.2650

Graduate Faculty

Professors

Gaupp, LaFontaine

Associate Professors

Chapa, Kongevick, Maher

Assistant Professor

Navalinsky

The School of Nursing

Dean: Elizabeth C. Poster, Ph.D.
669 Pickard Hall • Box 19407 • 817.272.2776 • www.uta.edu/nursing

Mission and Philosophy

The School of Nursing is an integral component of The University of Texas at Arlington and subscribes to the mission of the University. The School of Nursing prepares quality nurse health care providers through excellence in education, scholarship and service. The undergraduate and graduate academic programs prepare individuals for professional nursing roles and for collaboration with other professionals and consumers in the delivery of holistic health care.

The faculty believes learning is a continuous lifelong process and a personal responsibility. Students must be actively involved in the learning process to acquire clinical proficiency and to be socialized into professional roles. Learning experiences are implemented to achieve sequence, continuity, and synthesis of knowledge and expertise as defined by the educational outcomes. Teaching and learning are dynamic processes involving curriculum evaluation and revision based on research evidence, the needs of a multicultural society, and the changing health care system. The educational process facilitates the development of each person's potential and promotes cultural competence and assimilation of ethical principles.

Faculty and students foster an educational climate of mutual respect, honesty, intellectual inquiry, creativity, and effective communication. We contribute to the development of our profession through the conduct of research and the dissemination and application of evidence-based knowledge. Faculty and students provide service to the community through clinical practice and leadership.

Undergraduate nursing education builds on a foundation of studies in the sciences, humanities, and arts. The baccalaureate program prepares competent, self-directed generalist nurses (Registered Nurses) who can assume increasing responsibility and leadership in the delivery of evidence-based nursing care.

Master's education builds on a foundation of undergraduate nursing education and provides specialty practice with an expanded theoretical and empirical knowledge base. The Master of Science in Nursing programs prepare Registered Nurses for advanced functional roles that require increased accountability, expertise, and leadership. Graduates are prepared to provide evidence-based health care in collaboration with other health care providers and consumers.

Doctoral education develops and advances empirical knowledge to promote evidence-based practice in the discipline of nursing. Graduates have a background to develop theories and conduct research with vulnerable populations and to assume academic, research, and leadership roles. The doctorate provides a basis for future research programs and other scholarly activities.

Lifelong learning is the responsibility of each professional nurse. Continuing education programs developed by the School of Nursing are sensitive to the influences of a changing society and respond to the continuing education needs of professional nurses in Texas.

History and Overview

The UT Arlington School of Nursing was established in 1971 as the UT System School of Nursing in Fort Worth and was housed in John Peter Smith Hospital. The first baccalaureate class enrolled in fall of 1972; the graduate program (MSN) began in 1975. In 1976, the school became an academic unit of UT Arlington, moving to the campus in 1977.

The Undergraduate Program consists of the BSN and the RN to BSN programs. In addition to the Arlington campus, the RN to BSN program is offered via videotape on selected extended campuses. The Graduate Program offers a Master of Science in Nursing (MSN) with preparation as a nurse practitioner in the areas of Acute Care (1996), Acute Care Pediatric (2005), Adult (1989), Emergency (2004), Family (1975), Gerontology (1984), Neonatal (2008), Primary Care Pediatric (1985), and Psychiatric-Mental Health (1995). Post-master's certificates are available in all the above nurse practitioner specialties. In addition, the UT Arlington MSN Program offers preparation in Nursing Administration (1982) and Nursing Education (2008). A dual degree of MSN (administration major) and Masters of Business Administration (MBA) was offered in 1999 and a dual degree of MSN and Masters of Science in Health Care Administration was offered in 2001. A joint degree of MSN and Masters in Public Health (MPH) is offered with University of North Texas Health Science Center (2007). Additional certificates are offered in the following areas: Nursing Education (2001), Nurse Educator Role (2002), and Advanced Nurse Educator Role (2001). A Ph.D. in Nursing began in Fall 2003. The Ph.D. Program includes two portfolio areas of study: 1) Academic Role Development and 2) Clinical Research. A BSN-to-Ph.D. entry option began in Fall 2006.

Accreditation

The Master of Science in Nursing degree program is accredited by the Commission on Collegiate Nursing Education (CCNE). The CCNE address is One Dupont Circle, NW, Suite 530, Washington, DC 20036-1120; Phone is (202) 887-6791 and fax is (202) 887-8476; and Web site: **www.aacn.nche.edu/accreditation**. There are no accrediting agencies for nursing programs at the doctoral level.

Scholastic Activities and Research Interests of the Faculty

The research programs of the School of Nursing faculty are diverse. A sampling of their areas of study includes Hispanic health care (Dr. Mary Lou Bond); effects of colon cleansing/ gastroenterology (Dr. Marilee Schmelzer); nursing care outcomes (Dr. Carolyn L. Cason); chemical dependency and abuse (Drs. Cheryl Anderson and Diane

Snow); care of persons with HIV disease and AIDS (Dr. Jennifer Gray); sickle cell disease (Dr. Phyllis Adams); care of the elderly (Dr. Barbara Raudonis); nursing informatics (Dr. Pat Turpin); leadership and management (Dr. Sharon Judkins); effects of illness on cognitive function (Dr. Mary Schira); health services research (Dr. Reni Courtney); noise in critical care unit (Dr. Wendy Barr); outcomes in psychiatric nursing (Dr. Elizabeth Poster); and simulation instruction, neonatology, and very low birth weight (Dr. Judy LeFlore).

Special Programs and Opportunities

Smart Hospital™

Manager: Dr. Tiffany Holmes

The Smart Hospital™ is a simulated hospital environment complete with state-of-the-science equipment and furnishings. In this facility, students interact with and provide care to a full array of simulated patients who occupy the Emergency Room, ICU, Labor & Delivery (LDRP) suites, pediatric unit, Neo-Natal ICU, adult medical/surgical beds and the large team training resuscitation room. Students learn utilizing simulation technology including full body interactive patient simulators, computerized scenario-based programs and individual trainers for specific skills.

Learning Resources Center

Director: Dee Dee Freeman

The mission of the Center is to provide both undergraduate and graduate students a place to develop, refine, and apply knowledge in the clinical practice of skills. Computer labs are available for student use. Faculty members are provided resources to support classroom instruction, clinical learning activities, and scholarly endeavors.

Center for Nursing Research

Associate Dean for Research: Dr. Carolyn Cason

Research is an important component of the professional role in the School of Nursing. The Center provides research support services to faculty and students: identifying funding sources; developing competitive proposals; writing grant applications; retrieving literature; collecting, entering and analyzing data; and disseminating research results. Collaborative relationships for research with Metroplex health care agencies are in place.

Center for Psychopharmacology Education and Research

Director: Dr. Diane Snow

This Center is committed to advancing the knowledge of psychopharmacology and related neurosciences. The Center promotes the acquisition of this knowledge through education of Advanced Practice Registered Nurses (APRNs) and other health care professionals.

Center for Hispanic Studies in Nursing and Health

Co-Directors: Dr. Wendy Barr and Dr. Mary Lou Bond

The Center is dedicated to fostering understanding between health care professionals and people of Hispanic origin for the purpose of increasing understanding of health and healing through research of individual experience, cultural meanings, and the structure of institutions as important variables influencing health outcomes. The Center is also committed to the provision of educational programs and services which will assist health care providers to gain the necessary knowledge and skills to deliver increasingly culturally sensitive and competent care. The Center promotes interdisciplinary and interuniversity collaboration as a strategy for development of resources to solve or deal with bicultural issues facing health care professionals.

Rural Health Outreach Program

Director: Sylvia Rawlings

The purpose of the Center is to provide appropriate, affordable, accessible continuing education to the nursing staffs of acute care and psychiatric hospitals, long term care facilities, home health agencies, and other health care facilities in the rural communities of North Central Texas.

Center for Continuing Nursing Education

Director: Dr. Toni McKenna

The mission of this Center is to provide quality continuing nursing education for the improvement of nursing practice and health care in North Texas. The program strives to be a regional center for the advancement of professional continuing nursing education and to meet the diverse needs of nurses in most every clinical specialty and all levels of functional roles.

Center for Leadership in Nursing and Health Care

Director: Chick Deegan

The Center's mission is to provide students, faculty, nurse executives, managers, and clinicians working in all types of health care settings the educational resources and specific programs to develop leadership skills complementary to the formal curricula of schools of nursing.

Programs

Major Areas of Study for MSN

Nursing Administration

Nursing Education

Nurse Practitioner Programs

- Acute Care Nursing
- Acute Care Pediatric Nursing
- Adult Nursing
- Emergency Nursing
- Family Nursing
- Gerontology Nursing
- Neonatal Nursing
- Primary Care Pediatric Nursing
- Psychiatric-Mental Health Nursing (Adult or Family)

Major Areas of Study for Ph.D. in Nursing

Academic Role Development

Clinical Research

Nursing

www.uta.edu/nursing

Degrees in Nursing
M.S.N.
Ph.D.

Master's Degree Plans
Thesis and Non-Thesis

Doctoral Degree Plan
Dissertation

Dean
Elizabeth C. Poster
669 Pickard Hall, 817-272-2776

Interim Associate Dean of Masters in Nursing (MSN) Program and MSN Graduate Advisor
Mary Schira
604 Pickard Hall, 817-272-2329

Associate Dean of Ph.D. in Nursing and Graduate Advisor
Jennifer Gray
518 Pickard Hall, 817-272-5295

Graduate Faculty
Professors
Bond, Cason, Mancini, Poster

Associate Professors
C. Anderson, Barnes, Courtney, Gray, Hegstad, Judkins, Raudonis, Schmelzer

Assistant Professors
John, LeFlore, Mintz-Binder, Newcomb, Weber

Clinical Professors
Snow, Stotts

Associate Clinical Professors
Adams, M. Anderson, Baker, Barr, Schira, Turpin

Assistant Clinical Professors
M. Anderson, Carlson, Handy, Michael, Taylor, Willson

Clinical Instructors
Daniels, Dihigo, Fowler, Harmon, McClean, McKay, Moake, Moore, Parker, Patrick, Rashdan, Simpson, Schram, Wyrick

MSN Admissions Requirements

The applicant for the Master of Science in Nursing (MSN) degree must meet the general requirements of the Graduate School and have a Bachelor of Science in Nursing (BSN) degree from a program accredited by the National League for Nursing Accrediting Commission (NLNAC) or the Commission on Collegiate Nursing Education (CCNE) or proof of equivalent education at a foreign institution. Individual consideration may be given to applicants who hold a BSN degree from non-accredited programs and to applicants with baccalaureate degrees in other areas.

Potential students must also possess a current unencumbered Texas RN license or an unencumbered license from a designated compact state for admission.

The School of Nursing admission criteria are detailed in the table on the next page. The admission status options are described, with a grade point average (GPA) and graduate record exam (GRE) ratio provided to clarify probationary and unconditional admission requirements.

Unconditional Admission

Criteria for unconditional admission status are designated in the MSN Admission Table that follows.

Probationary Admission

Criteria for probationary admission status and the GPA-GRE ratio are listed on the MSN Admission Table that follows. When on probation, students can make no grade lower than a B in their first 12 semester hours of graduate coursework.

Provisional Admission

An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements will be granted provisional admission.

Deferred Status

Deferred decision is granted when a file is incomplete or when a denial decision is not appropriate.

Denial of Admission

An applicant will be denied admission if they have less than satisfactory performance on a majority of admission criteria listed in the table on the next page.

Admission Policy for Individuals Ineligible to Continue Graduate Study at Another University: If potential students are ineligible to continue graduate study at another university and apply to The University of Texas at Arlington MSN Program, we recommend that they be reviewed by an admission committee. The admission committee will be composed of: 1) Director of the Program they wish to study, 2) Representative core faculty, and 3) MSN Graduate Advisor. The admission committee will make their recommendation for admission or denial based on the following: 1) Admission materials (GPA on the last 60 hours of BSN, graduate GPA, GRE scores, grade of C or higher on statistics, letters of recommendation, essay, and English language score if applicable); 2) a narrative statement from the potential student providing a rationale for their ineligibility at another university; and 3) a plan for successful study at UT Arlington. The committee reserves the right to ask for additional materials as are needed. The committee will make its recommendation of admission or denial to the Graduate Office for the University.

MSN Graduate Admission Table		
Admission Criteria	Unconditional	Probationary
GPA on last 60 hours of Undergraduate Program (BSN) (as calculated by Graduate School of UT Arlington)	3.0[1]	2.8-2.99
GRE[2] Two highest GRE scores will be used in admission process.	Waived	2.9 - Verbal 430[2, 3] Quantitative 430[3] Analytical Writing 3.5 Or 430[3] 2.8 - Verbal 440 Quantitative 440 Analytical Writing 3.5 Or 440
GMAT Required for MSN/MBA Dual Degree	GPA x 200 + GMAT score = Minimum 1080	See MBA Advisor
TSE (Test of Spoken English) or TOEFL (Test of English as a Foreign Language) or IELTS (International English Language Testing System)	TSE: Score of 40 or higher or TOEFL: Minimum of 550 on paper-based test, 213 on computer-based test, or 79 on the Internet-based test and achieve the following minimum scores of subtests: Writing, 22; Speaking, 21; Reading, 20; and Listening, 16 or IELTS minimum score of 7.0	
3 letters of recommendation	Evaluated by Associate Dean of MSN Program	
Clinical Experience	Two years clinical experience recommended for all programs except Acute Care Pediatric, Acute Care, and Emergency Nurse Practitioner Programs, which require 2 years of acute care pediatric experience, acute care adult experience, or emergency department experience, respectively. International students: Two years clinical experience in a United States (or equivalent) health care system is required (evaluated by Associate Dean of MSN Program and Program Director).	
Essay	Evaluated by Associate Dean of MSN Program	
Unencumbered RN License in Texas[4]	Evaluated by Associate Dean of MSN Program	
Pediatric Advanced Life Support (PALS)	Required only for the Acute Care Pediatric Nurse Practitioner Program	
BSN from NLNAC or CCNE Accredited Program	Evaluated by Associate Dean of MSN Program	
Statistics	Minimum grade of "C"	
Physical Assessment for Nurse Practitioner and Nursing Education Applicants	Current within last three years (course or continuing education program)	
Computer expertise for Nursing Administration applicants	Reviewed by Director of Nursing Administration	

[1] Minimum undergraduate GPA requirement for unconditional admission is a 3.0 on a 4.0 scale.

[2] Verbal, Quantitative, and Analytical Writing GRE scores will be reviewed and the two highest scores will be considered for the admission process. Rationale: The three GRE scores have similar correlations (r = .3 - .4) with the UT Arlington MSN graduates' GPA. Thus, the scores seem to have similar ability to predict success in graduate study. The Graduate Studies Committee (GSC) in Nursing approved that the two highest GRE scores be considered for the admission process, allowing the student some flexibility in the admission process.

[3] Students not meeting GPA/GRE ratio will be reviewed by a committee of Chair of the GSC in Nursing, MSN Graduate Advisor, Director of Program student has selected for study, and a Core Faculty. The committee will review the following: GPA; GRE scores (verbal, analytical/analytical writing, and quantitative); letters of recommendation; TOEFL (if applicable); essay; and statistics' grade. An applicant who performs successfully on a majority of these criteria will be admitted on probation. The committee will make a final admission decision and document that decision for the student record.

[4] All graduate nursing students must have an unencumbered registered nursing license as designated by the Board of Nursing (BON) for clinical courses. It is imperative that any student whose license becomes encumbered by the BON must immediately notify the Associate Dean for the MSN Program. The complete policy about encumbered RN license is available online at:
http://www.uta.edu/nursing/grad/unencumbered.

MSN Fellowship Criteria

Fellowship selection will be based on the highest GPA in the last 60 hours of BSN. Candidates for fellowships must meet the following criteria:

1. New students admitted to UT Arlington in the fall semester.
2. Have a minimum GPA of 3.0 in the last 60 hours of their BSN.
3. Maintain 3.0 GPA in graduate credit hours while receiving the fellowship.
4. Enrolled in a minimum of 6 semester hours in the long semesters.

MSN Degree Requirements

Students are required to have each semester's degree plan approved by the MSN Graduate Advisor prior to registration. A minimum of 36 semester hours, thesis or non-thesis option, is required for the degree. Three to six semester hours of elective coursework that supports the selected nursing study area are required and must be approved by the MSN Graduate Advisor prior to registration. Students selecting nurse practitioner preparation in Acute Care Nursing, Acute Care Pediatric Nursing, Adult Nursing, Emergency Nursing, Family Nursing, Gerontological Nursing, Neonatal Nursing, Primary Care Pediatric Nursing, or Psychiatric Mental Health Nursing and electing the thesis option are required to complete 51-54 semester hours for the degree depending on their area of study. Students selecting Acute Care Pediatric Nursing, Adult Nursing, Emergency Nursing, Family Nursing, Gerontological Nursing, Neonatal Nursing, Primary Care Pediatric Nursing, or Psychiatric Mental Health Nursing must select Nurse Practitioner as their functional area.

All non-thesis candidates for the degree of Master of Science in Nursing shall pass a written examination (comprehensive exams) or complete a scholarly project (master's completion project) as determined by the School of Nursing. All thesis candidates for the degree of Master of Science in Nursing shall present the completed thesis in a final oral examination.

MSN students must complete hours in required courses, nursing specialty area, functional role, and elective(s).

MSN Required Courses

NURS 5327. Analysis of Theories for Nursing
NURS 5301. Research in Nursing
NURS 5328. Theory and Research Application in Nursing

MSN Nursing Specialty Areas

Each student must complete the required courses in at least one nursing specialty area:

Nursing Administration
NURS 5311, 5341, 5342, 5343, 5382

Nursing Education
NURS 5302, 5308, 5309, 5315, 5360, 5361, 5362, 5418

Nurse Practitioner Programs
Acute Care: NURS 5303, 5305, 5314, 5315, 5334, 5418, 5435, 5436, 5631
Acute Care Pediatric: NURS 5303, 5306, 5314, 5315, 5334, 5418, 5441, 5442, 5444, 5631
Acute Care and Primary Pediatric: NURS 5303, 5306, 5314, 5315, 5334, 5418, 5441, 5442, 5444, 5631, 5631
Adult: NURS 5303, 5305, 5313, 5315, 5334, 5418, 5420, 5421 or 5546, 5631
Emergency: NURS 5303, 5305, 5306, 5314, 5315, 5334, 5418, 5433, 5434, 5631
Family: NURS 5303, 5305, 5306, 5313, 5315, 5334, 5418, 5430, 5431, 5631
Gerontological Nursing: NURS 5303, 5305, 5313, 5315, 5334, 5418, 5420, 5422 or 5546, 5631
Neonatal Nursing: NURS 5307, 5314, 5315, 5334, 5418, 5438, 5444, 5539, 5631
Primary Care Pediatric: NURS 5303, 5306, 5313, 5315, 5334, 5418, 5442, 5444, 5631
Psychiatric-Mental Health (Adult): NURS 5303, 5305, 5315, 5334, 5418, 5424, 5425, 5631
Psychiatric-Mental Health (Family): NURS 5303, 5305, 5306, 5315, 5334, 5418, 5424, 5425, 5631

MSN Functional Role

Each student must complete the required courses in at least one functional role as designated by their degree plan:
Administration: NURS 5339, 5340
Nurse Practitioner: NURS 5350
Educator: NURS 5329

Electives/Independent Study

Elective courses may be taken in Nursing or other departments of the University. Electives can also be transferred from other universities with the approval of the MSN Graduate Advisor. Independent study offers the student the opportunity to explore topics of special interest.

Post-Masters Nursing Certificates

The nurse practitioner certificate enables graduates to be recognized by the Board of Nurse Examiners as an Advanced Practice Nurse and to take a national certification exam in their area of specialization. Certificate students must complete the required courses for the nursing specialty area and functional role.

Acute Care Nurse Practitioner
Acute Care Pediatric Nurse Practitioner
Adult Nurse Practitioner
Emergency Nurse Practitioner
Family Nurse Practitioner
Gerontological Nurse Practitioner
Neonatal Nurse Practitioner
Primary Care Pediatric Nurse Practitioner
Psychiatric-Mental Health Nurse Practitioner (Adult or Family)

Masters Nursing Certificates

Three certificates in Nursing Education are available through the School of Nursing.

- Nursing Education: A 6-hour certificate that includes any combination of three education courses (NURS 5302, 5308, or 5309).
- Nurse Educator Role: A 6-hour certificate that includes NURS 5302 and 5329.
- Advanced Nurse Educator Role: A 12-hour certificate which includes four educator courses (NURS 5302, 5308, 5309, and 5329). This certificate provides the strongest background to be an educator in either an associate degree or baccalaureate program.

MSN Cooperative Programs

Cooperative Agreement between The University of Texas at Arlington School of Nursing and Texas Tech University Health Sciences Center School of Nursing (TTUHSCSON). Students may transfer a maximum of 18 hours of designated courses from TTUHSCSON to fulfill part of the requirements for an MSN in Psychiatric-Mental Health Nursing at UT Arlington. Students must complete 30 designated course hours at UT Arlington. See MSN Graduate Advisor for details of Cooperative Agreement.

Cooperative Agreement between The University of Texas at Arlington School of Nursing and The University of Texas Southwestern Women's Health Care Nurse Practitioner Program. Students who had a BSN and then completed the Women's Health Nurse Practitioner Program may receive 6-9 hours of credit toward an MSN at UT Arlington. The remainder of the nurse practitioner course requirements must be completed at UT Arlington. See MSN Graduate Advisor for details of Cooperative Agreement.

Cooperative Agreement between The University of Texas at Arlington School of Nursing and The University of Texas at Tyler (UTT). Students may transfer a maximum of 12-15 hours of designated courses from UTT to fulfill part of the requirements for an MSN at UT Arlington. Students must complete 33-39 designated nurse practitioner course hours at UT Arlington. See MSN Graduate Advisor for details of Cooperative Agreement.

Veteran's Administration Medical Centers (VA). The School of Nursing has developed a Cooperative Agreement with eight VA Medical Centers across North Texas to deliver the Nursing Administration MSN through VTEL distanced education (DE) format. See MSN Graduate Advisor for details of Cooperative Agreement.

Texas Health Resources (THR). A Cooperative Agreement exists between THR and the School of Nursing to offer the Nursing Administration MSN by VTEL to Presbyterian Hospital in Dallas and Harris Hospital in Fort Worth. See MSN Graduate Advisor for details of Cooperative Agreement.

Dual or Joint Degree Programs

Dual Degree Programs

Master of Science in Nursing Administration/Master of Business Administration (MSN/MBA) [60 credit hours]

Master of Science in Nursing/Master of Science in Health Care Administration (MSN/HCAD) [56-57 credit hours]

Joint Degree (MSN from UT Arlington and MPH from University of North Texas Health Science Center in Fort Worth)

Master of Science in Nursing/Master of Public Health (MSN/MPH) [57-60 credit hours]

Ph.D. Program

Doctoral nursing education builds on a foundation of prior nursing education and prepares the student for original research and theory development. The Ph.D. in Nursing Program is designed to prepare nurse scientists to meet the health needs of a rapidly changing and culturally diverse society. The central focus of the Ph.D. in Nursing Program is to prepare researchers and teachers who understand how communities evolve, interact, change and how they prescribe, understand and sanction health, illness, and health seeking behaviors.

The Ph.D. in Nursing program offers two routes of entry. Potential students with a master's degree in nursing may be admitted based on criteria outlined below. Potential students with a BSN may be considered for entry through the BSN-to-Ph.D. option and should refer to the BSN-to-Ph.D. section.

MSN-to-Ph.D. Admission and Degree Requirements

The applicant for the Doctor of Philosophy in Nursing (Ph.D.) degree must meet the general requirements of the Graduate School and have a Master of Science in Nursing degree from a program accredited by the National League for Nursing Accrediting Commission (NLNAC) or the Commission on Collegiate Nursing Education (CCNE) or proof of equivalent education at a foreign institution.

Foreign students whose native language is not English must take the Test of Spoken English (TSE), the Test of English as a Foreign Language (TOEFL), or the International English Language Testing System (IELTS). Persons taking the TSE must make a minimum score of 40. Persons taking the TOEFL must make a minimum score of 550 on the paper-based test, 213 on the computer-based test, and meet the following criteria on the internet-based test: attain a minimum overall score of 79 and achieve the following minimum scores of subtests:

- Writing: 22
- Reading: 20
- Speaking: 21
- Listening: 16

Persons taking the IELTS must make a minimum score of 7.0.

A foreign student wishing to be a graduate research assistant or a graduate teaching assistant will need to take the Spoken English Assessment, offered at UT Arlington, or the Test of Spoken English. The foreign student must also possess a current Texas RN license for admission.

Ph.D. Admission Status Options

The School of Nursing admission criteria are detailed in the Ph.D. Program Requirements table.

Unconditional Admission

Applicants must meet all criteria for unconditional admission.

Probationary Admission

Criteria for probationary admission status are designated in the Ph.D. Program Requirements table. When on probation, students can make no grade lower than a 3.0 in their first 12 semester hours of graduate coursework.

Provisional Admission

An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements.

Deferred Status

Deferred decision is granted when a file is incomplete or when a denied decision is not appropriate.

Denial of Admission

An applicant will be denied admission if he/she has less than satisfactory performance on a majority of admission criteria listed in the table below. The Ph.D. Admissions Committee will make a recommendation for denial.

MSN-to-Ph.D. Program in Nursing Admission Requirements		
Admission Criteria	Unconditional	Probationary
Master' s Degree in Nursing from a National League for Nursing Accrediting Commission (NLNAC) or American Association of Colleges of Nursing' s Commission on Collegiate Nursing Education (CCNE) accredited School of Nursing or equivalent.	Evaluated by Associate Dean for Ph.D. Program in Nursing.	
GPA on master' s coursework.	3.0 GPA on a 4.0 scale	3.0 GPA on a 4.0 scale
For international students, TSE (Test of Spoken English) or TOEFL (Test of English as a Foreign Language) or IELTS (International English Language Testing System)	TSE: Score of 40 or higher or TOEFL: Minimum of 550 on paper-based test, 213 on computer-based test, or 79 on the Internet-based test and achieve the following minimum scores of subtests: Writing, 22; Speaking, 21; Reading, 20; and Listening, 16 or IELTS minimum score of 7.0.	
Graduate level statistics course with a minimum grade of B.	Implement as stated	
Interview	7 or higher on rating scale of 1-10	6 or less on rating scale of 1-10. Evaluated by Admissions Committee.
Written statement of goals.	7 or higher on rating scale of 1-10	6 or less on rating scale of 1-10. Evaluated by Committee.
Professional liability insurance.	Evaluated by Associate Dean for the Ph.D. Program in Nursing.	
Current unencumbered license as a RN; license in the state where student is participating in clinical activities.	Evaluated by Associate Dean for the Ph.D. Program in Nursing.	
Immunizations required by the School of Nursing.	Evaluated by Associate Dean for the Ph.D. Program in Nursing.	
Criminal background check, which satisfies the Dallas/Fort Worth Hospital Council and the Texas Board of Nurse Examiners.	Evaluated by Associate Dean for the Ph.D. Program in Nursing.	
Drug screen prior to clinical and research activities in health care agencies, which satisfies the Dallas/Fort Worth Hospital Council and the Texas Board of Nurse Examiners.	Evaluated by Associate Dean for the Ph.D. Program in Nursing.	
Demonstration of proficiency in use of computer for word processing, spreadsheet development, and data and text file creation and manipulation.	Evaluated by Associate Dean for the Ph.D. Program in Nursing.	

Graduate Dean Fellowship Criteria

Fellowship selection will be based on the following criteria:

1. Highest GPA but no lower than 3.25 on BSN and MSN.
2. New students admitted to UT Arlington in the Fall semester.
3. Minimum 3.25 GPA in graduate credit hours while receiving fellowship.
4. Enrolled in a minimum of 6 semester hours in the long semesters.

Ph.D. Degree Requirements

Students are required to have each semester's planned program approved by the Graduate Advisor prior to registration. A minimum of 57 semester hours is required for the degree: 36 hours of core courses, 12 hours in the portfolio area of choice, and 9 hours of dissertation.

Ph.D. Required Courses (Core)

NURS 6301 Theoretical Evolution in Science
NURS 6302 Issues in Studying Health of Culturally Diverse and Vulnerable Populations
NURS 6303 Culture of Science
NURS 6304 Measurement
NURS 6305 Qualitative Research
NURS 6306 Research Design
NURS 6308 Research Seminar
NURS 6309 Scientific Products: Preparation & Dissemination
NURS 6310 Proposal Development Seminar
6 hours Advanced Statistics approved by Graduate Advisor
3 hours Epidemiology approved by Graduate Advisor

Courses Required for Portfolio Areas (Each student must complete the required courses in one of the two portfolio areas)

Academic Role Development

NURS 6311 The Academic Role in Higher Education
NURS 6313 Preparing Nurse Educators to Assist Students for Care of Diverse and Vulnerable Populations
NURS 6315 Faculty Internship in Nursing Education
3 hours Psychometric Theory Course approved by Graduate Advisor

Clinical Research

NURS 6314 Clinical Research: A Nursing Perspective
NURS 6316 Clinical Research Residency
NURS 6317 Conduct of Research in Clinical Environment
3 hours of health economics approved by Graduate Advisor

Dissertation

NURS 6399 Dissertation Graded R/F
NURS 6699 Dissertation Graded R/F
NURS 6999 Dissertation Graded R/F

Electives / Independent Study

Elective courses may be taken in an area of concentration in other departments.

6170, 6270, 6370, 6470. Independent Study in Nursing Graded P/R/F.

6190, 6290, 6390, 6490. Topics in Nursing

Language Requirement

Each doctoral student must demonstrate knowledge of a foreign language by ONE of the following ways:
(1, 2, OR 3)

1. Reading knowledge of one foreign language (Spanish, French, Russian or other as approved by the Graduate Studies Committee).
   a. Examination prepared by appointee of Dean of Graduate Studies for the University; or
   b. Acceptable score on Testing Service Graduate School Foreign Language Test; or
   c. B or higher on 12 credit hours of a foreign language taken within the last 5 years and approved by the Graduate Studies Committee
2. Oral proficiency in one foreign language (Spanish, French, Russian or other as approved by the Graduate Studies Committee) as determined by an examination prepared by appointee of Dean of Graduate Studies for the University.
3. Proficiency in a research tool area (statistics or computer language). Students, upon the advice and consent of their Graduate Advisor, may meet the foreign language requirement by making a B or higher on 12 credit hours in advanced statistics; information systems courses including database development and management; biomedical instrumentation; graphical information systems; or, other set of courses that support the student's research goals.

Diagnostic Evaluation

Before 18 core hours to assess progress and potential for completion.

Comprehensive Examination

Exam scheduled after all coursework and language requirements are completed. Guidelines for the comprehensive exam are available from the Graduate Advisor for the Ph.D. Program.

Dissertation Defense

Successful defense of the dissertation is the final step toward completion of the doctoral degree.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

Below is a complete course listing of the MSN and Ph.D. in Nursing programs. For any questions regarding grading, please see policies and procedures in the graduate section of the Catalog.

Nursing (NURS)

5170. INDEPENDENT STUDY IN NURSING (1-0). Detailed in-depth study in a specific topic area. Topic and mode of study are agreed upon by student(s) and instructor prior to registration. May be repeated for credit when topics vary. Graded F, P, R.

5190. TOPICS IN NURSING (1-0). Selected topics in advanced nursing. May be repeated for credit as topics change.

5191. COMPREHENSIVE EXAM SEMINAR (1-0). Directed study, consultation and comprehensive examination over coursework leading to a Masters of Science in Nursing. Graded F, P, R.

5192. COMPLETION PROJECT IN NURSING (1-0). Collaborative research experience with faculty to develop a paper for publication. Graded F, P, R.

5205. ISSUES IN PROFESSIONAL NURSING (2-0). Explores and analyzes contemporary issues and health care trends that influ-

ence leadership for the practice of professional nursing within a dynamic health care system.Prerequisite: Senior status, graduate standing or permission of instructor.

5270. INDEPENDENT STUDY IN NURSING (2-0). Detailed in-depth study in a specific topic area. Topic and mode of study are agreed upon by student(s) and instructor prior to registration. May be repeated for credit when topics vary. Graded F, P, R.

5290. TOPICS IN NURSING (2-0). Selected topics in advanced nursing. May be repeated for credit as topics change.

5292. COMPLETION PROJECT IN NURSING (2-0). Collaborative research experience with faculty to develop a paper for publication. Graded F, P, R.

5301. RESEARCH IN NURSING (3-0). Exploration of the research process and critical examination of published studies with emphasis on research critique, interpretation of statistical results, and evidence-based practice. Prerequisite: Graduate Standing.

5302. CURRICULUM DEVELOPMENT IN NURSING (3-0). Explore the nature of nursing education. Focus on the curriculum process and its application to nursing education programs. Prerequisite: Graduate standing.

5303. PSYCHIATRIC MANAGEMENT IN ADVANCED NURSING PRACTICE (2-3). Foundations of clinical management of individuals with common psychiatric-mental health problems across the lifespan. Prerequisite: NURS 5418, 5334.

5305. ADULT MANAGEMENT IN ADVANCED NURSING PRACTICE I (2-3). Foundations of clinical management for commonly occurring conditions of adults in primary care. Prerequisite: NURS 5418, 5334.

5306. PEDIATRIC MANAGEMENT IN ADVANCED NURSING PRACTICE (2-3). Foundations of advanced clinical practice in the primary care of children, birth to 21 years with a family centered approach on growth and development, health promotion and management of common health problems. Prerequisite: NURS 5418, 5334.

5307. NEONATAL NURSING FROM BIRTH THROUGH 2 YEARS OLD (2-3). Focuses on an interdisciplinary approach to the assessment, management, and coordination of care of patients with commonly encountered health care problems experienced in the Neonatal Intensive Care Unit and after discharge through 2 years of age, along with their families. Prerequisite: NURS 5438.

5308. NURSING INFORMATICS (2-3). Focus on application of computer technology that supports the dissemination of health care data, information and knowledge. Selected software packages/applications are presented and used. Prerequisite: Graduate standing.

5309. TEACHING/LEARNING THEORIES, STRATEGIES, AND EVALUATION (3-0). Examination of teaching, learning, and evaluation strategies for nursing education. Prerequisite: Graduate standing.

5310. NEGOTIATION AND CONFRONTATION (3-0). Focus on analysis and synthesis of knowledge from relevant theories and implementation of interpersonal skills and techniques of negotiation and confrontation. Prerequisite: Graduate standing.

5311. NURSING MANAGEMENT IN THE HEALTH CARE ENVIRONMENT (3-0). Considers development of theories of leadership and organizational behavior as applied to the health care arena. Prerequisite: NURS 5327 or concurrent enrollment.

5313. CLINICAL PROCEDURES FOR ADVANCED PRACTICE NURSES (2-3). A theory and clinical procedures course designed for the Advanced Practice Nurse to acquire skills and procedures in the clinical management of selected patients. Prerequisite: NURS 5334 or concurrent enrollment.

5314. INVASIVE PROCEDURES FOR ADVANCED PRACTICE NURSES (2-3). A theory and clinical procedures course designed for the Advanced Practice Nurse to acquire invasive skills and procedures in the clinical management of selected patients. Prerequisite: NURS 5334.

5315. ADVANCED PATHOPHYSIOLOGY (3-0). Focuses on developing an advanced knowledge base of pathophysiology of selected diseases. Principles of biochemistry, molecular biology, and nutrition are applied to disease processes. Prerequisite: Graduate standing.

5317. ADVANCED PSYCHOPHARMACOLOGY (3-0). The study of psychopharmacology practice for advanced practice nurses. Prerequisite: APRN (Master's Degree in Nursing, National Certification).

5321. NUTRITION IN HEALTH AND DISEASE FOR NURSING PRACTICE (3-0). Focuses on the development of a scientific knowledge base of current nutritional practices in preventive, therapeutic management, and clinical research. Prerequisite: Graduate standing.

5322. ANALYSIS AND INTERPRETATION OF RESEARCH DATA IN HEALTH CARE (3-0). Analysis and interpretation of research data for health related studies using a Windows-based computer statistical package. Prerequisite: Elementary statistics.

5327. ANALYSIS OF THEORIES FOR NURSING (3-0). Critical examination of philosophical and theoretical bases for nursing. Analysis of selected concepts and theories. Prerequisite: Graduate standing.

5328. THEORY AND RESEARCH APPLICATION IN NURSING (3-0). Integration of theoretical and empirical elements of nursing research with emphasis on proposal development. Prerequisite: NURS 5327 and NURS 5301.

5329. ROLE OF THE NURSE EDUCATOR (3-0). Investigation of the roles and functions of the nurse educator. Prerequisite: NURS 5301 and NURS 5327.

5331. ADVANCED CLINICAL NURSING PRACTICUM (12-0). Clinical preceptorships in selected health practice sites with opportunities to apply knowledge, skills, and concepts in a guided, progressive context of advanced nursing practice. The ratio of credit to clinical hours is 1:4 Prerequisite: NURS 5421 or 5422 or 5425 or 5431 or 5434 or 5436 or 5444 or 5546, Good academic standing. Graded F, P, R.

5334. ADVANCED PHARMACOLOGY FOR NURSE PRACTITIONERS (3-0). Study of clinical pharmacological therapeutics for advanced nursing practice. Prerequisite: NURS 5315.

5339. ROLES AND FUNCTIONS OF THE NURSE ADMINISTRATOR (1-6). Examine and implement administrative and managerial roles in health care organizations. Prerequisite: NURS 5311; NURS 5328 or concurrent enrollment.

5340. MANAGEMENT SEMINAR AND PRACTICE (1-6). Synthesize management, organizational, and leadership concepts and theories in selected health care settings. Prerequisite: NURS 5339 and 5342.

5341. FINANCIAL MANAGEMENT IN NURSING (2-3). Analyze and apply financial management concepts to financial planning, budgeting, and reimbursement systems in health care. Prerequisite: NURS 5311; 5301 or concurrent enrollment. Computer literacy with spreadsheets.

5342. MANAGEMENT OF NURSING OPERATIONS (2-3). Examine effective strategic planning for health care systems. Prerequisite: NURS 5341.

5343. NURSING LEADERSHIP AND COMPLEX HEALTH CARE SYSTEMS (3-0). Analyze leadership strategies in current and predicted health care systems including dimensions of workforce and workplace issues, leadership, and evidenced-based decision-making. Prerequisite: NURS 5327 and 5311 or concurrent enrollment.

5344. FINANCE AND HUMAN RESOURCE MANAGEMENT FOR ADVANCED NURSING PRACTICE (2-3). Enhance the effectiveness of the advanced practice nurse through the development

of skills in financial and human resource management. Prerequisite: NURS 5343.

5350. ROLE OF THE NURSE IN ADVANCED PRACTICE (2-3). Theory and application of the multiple roles of the advanced practice nurse within the health care system. Prerequisite: NURS 5418 or concurrent enrollment.

5360. SIMULATION APPLICATION IN NURSING (2-3). Application of simulation and active learning strategies in nursing education.

5361. SPECIAL TOPICS IN CLINICAL PRACTICE (2-3). Advanced clinical practice with selected targeted patient populations. Prerequisite: NURS 5315, NURS 5418.

5362. NURSING EDUCATION PRACTICUM (0-12). The ratio of credit to clinical hours is 1:4. Nursing education preceptorship in selected health care sites with opportunities to apply clinical and educational knowledge, skills, and concepts in a guided, progressive context of nursing education. Prerequisite: NURS 5308, NURS 5361, and NURS 5329 (or concurrent enrollment). Good academic standing.

5370. INDEPENDENT STUDY IN NURSING (3-0). Detailed in-depth study in a specific topic area. Topic and mode of study are agreed upon by student(s) and instructor prior to registration. May be repeated for credit when topics vary. Graded F,P,R.

5382. NURSING AND HEALTH CARE POLICY (3-0). Analyze historical, current, and predicted national, state, and local health care policy processes. Prerequisite: NURS 5327 or concurrent enrollment.

5386. HEALTH LAW (3-0). Health law as it affects professionals, institutions, and entities that deliver and finance health care. Prerequisite: Graduate standing.

5387. THE LAW OF HEALTH CARE MALPRACTICE (3-0). The law of health care malpractice as it affects professional relationships of all persons engaged in the provision of health care. Prerequisite: Graduate standing.

5390. TOPICS IN NURSING (3-0). Selected topics in advanced nursing. May be repeated for credit as topics change.

5392. COMPLETION PROJECT IN NURSING (3-0). Collaborative research experience with faculty to develop a paper for publication. Graded F, P, R.

5393. ADVANCED CLINICAL NURSING PRACTICE I (1-6). Development of advanced knowledge base of specialized clinical concepts and the application of this knowledge in selected clinical areas. Prerequisite: Graduate standing.

5394. ADVANCED CLINICAL NURSING PRACTICE II (1-6). Expanded background in a selected clinical area with emphasis on analysis and synthesis of clinical data, clinical judgment, and management of patients and families' care. Prerequisite: NURS 5393.

5398. THESIS (3-0). Graded F,R.

5418. ADVANCED HEALTH ASSESSMENT IN NURSING PRACTICE (2-6). Apply theoretical foundations and clinical skills in comprehensive health assessment across the lifespan. Prerequisite: NURS 5301 and NURS 5334 or concurrent enrollment. These items must be cleared with the Clinical Coordinator: Physical Assessment content within the last 3 years (upon admission) or approved Physical Assessment Continuing Education course; Drug Screen and Criminal Background Check 30 days prior to first day of class; Unencumbered Texas RN License; Current CPR (Cardiopulmonary Resuscitation) card; Current PALS (Pediatric Advanced Life Support) card (Acute Care Pediatric only); Current immunizations.

5420. ADULT MANAGEMENT IN ADVANCED NURSING PRACTICE II (2-6). Focus on advanced knowledge of chronic and complex health problems in the primary care management of groups from adolescents through old age. Prerequisite: NURS 5305; 5313 or concurrent enrollment.

5421. ADULT NURSING (2-6). Focus on advanced primary care knowledge for managing adults and their families with emphasis on adolescents, women, and older adults in primary health care. Prerequisite: NURS 5328, 5420; 5303 or concurrent enrollment.

5422. GERONTOLOGICAL NURSING (2-6). Focus on advanced knowledge in the management of older adults and their families in a variety of settings. Prerequisite: NURS 5328, 5420; 5303 or concurrent enrollment.

5424. PSYCHIATRIC-MENTAL HEALTH NURSING I (2-6). Focus on assessment and management of individuals, families, and groups at risk for and experiencing complex acute and chronic psychiatric disorders. Prerequisite: NURS 5303; 5305 or concurrent enrollment.

5425. PSYCHIATRIC-MENTAL HEALTH NURSING II (2-6). Focus on assessment and management of individuals, families, and groups at risk for and experiencing complex acute and chronic psychiatric disorders. Prerequisite: NURS 5328 and 5424.

5430. FAMILY NURSING I (2-6). Focus on advanced knowledge of acute, chronic, and complex health problems in the primary care management of individuals across the lifespan. Prerequisite: NURS 5305 and 5306; 5313 or concurrent enrollment.

5431. FAMILY NURSING II (2-6). Focus on advanced knowledge in the management of patients and families throughout the lifespan. Prerequisite: NURS 5328 and 5430; 5303 or concurrent enrollment.

5433. EMERGENCY NURSE PRACTITIONER ACROSS THE LIFESPAN I (2-6). Advanced clinical management of individuals across the lifespan with episodic and urgent health care needs. Prerequisite: NURS 5305 and 5306; 5314 or concurrent enrollment.

5434. EMERGENCY NURSE PRACTITIONER ACROSS THE LIFESPAN II (2-6). Advanced clinical management of individuals across the lifespan with emergent health care needs requiring resuscitative measures for potentially life threatening alterations. Prerequisite: NURS 5328 and 5433; 5303 or concurrent enrollment.

5435. ACUTE CARE NURSING I (2-6). Focuses on advanced knowledge of medical-surgical nursing in managing adults with secondary and tertiary health care needs. Prerequisite: NURS 5305; 5314 or concurrent enrollment.

5436. ACUTE CARE NURSING II (2-6). Focuses on an interdisciplinary approach to the management and coordination of secondary and tertiary care for adults with complex multisystem dysfunction. Prerequisite: NURS 5328 and 5433; 5303 or concurrent enrollment.

5438. PERINATAL/NEONATAL NURSING OF HIGH-RISK MATERNAL/FETAL DIAD (2-6). Focuses on advanced knowledge of perinatal/neonatal nursing in the high-risk pregnancy and neonate with secondary and tertiary health care needs along with their families. Prerequisite: NURS 5314 and NURS 5418 or permission of instructor. Course Specific Fee: $25. Clinical Nursing Fee: $40. Multimedia Fee: $3.

5440. ACUTE CARE PEDIATRIC NURSING I (2-6). Family focused approach to the management of children with secondary and tertiary health care needs. Emphasis will be placed on the application of clinical decision-making models in the management of children with selected acute medical-surgical conditions. Prerequisite: NURS 5303, 5306.

5441. ACUTE CARE PEDIATRIC NURSING (2-6). Focus is on advanced, interdisciplinary practice to assess, diagnose, and manage acute and critical, single and multi-system health problems of children birth to 21 years in secondary and tertiary care settings. Prerequisite: NURS 5306; 5314 or concurrent enrollment; 5442 or concurrent enrollment.

5442. PRIMARY CARE PEDIATRIC NURSING (2-6). Focus is on integration of acquired theoretical and empirical knowledge in the

assessment, diagnosis, and management of multiple common acute and stable chronic health problems in children birth to 21 years. Prerequisite: NURS 5306; 5313 or 5314 or concurrent enrollment.

5443. ADVANCED NURSING CARE OF PEDIATRIC CLIENT II (2-6). Theory and clinical management of complex pediatric problems. The focus is on developmental disabilities/chronic illness and social environmental problems in the developing child within the family. Prerequisite: NURS 5442; 5328 or concurrent enrollment.

5444. ADVANCED NURSING CARE OF PEDIATRIC PATIENTS WITH COMPLEX PROBLEMS (2-6). Clinical management of complex health problems of pediatric patients birth to 21 years within the family system. Prerequisite: NURS 5328; 5442; 5303 or concurrent enrollment.

5445. GERONTOLOGICAL/ADULT NURSING I (2-6). Theoretical study with applied clinical nursing judgment and management of adult and gerontological clients in health and illness. Prerequisite: NURS 5418, 5334 or concurrent enrollment.

5446. PALLIATIVE CARE NURSING I (2-6). Synthesize the principles, philosophy, and issues of palliative care with models for advanced practice decision-making in the management of pain and physical symptoms and the preservation of quality of life. Prerequisite: NURS 5303 and 5305.

5447. PALLIATIVE CARE NURSING II (2-6). Focus on the interdisciplinary management and coordination of palliative care for complex patients in culturally diverse and medically fragile, high-risk populations. Emphasis on compassionate care of patients with end-stage disease across a variety of health settings and the support of their families through death and bereavement. Prerequisite: NURS 5446.

5470. INDEPENDENT STUDY IN NURSING (4-0). Detailed in-depth study in a specific topic area. Topic and mode of study are agreed upon by student(s) and instructor prior to registration. May be repeated for credit when topics vary. Graded F,P,R.

5525. PSYCHIATRIC-MENTAL HEALTH NURSING (3-6). Focus on diagnosis and pharmacological and nonpharmacological management of individuals, families and groups experiencing mental illnesses and addictions. Prerequisite: NURS 5424, 5328 or concurrent enrollment.

5532. FAMILY NURSING II (3-6). A continuation of NURS 5431 with progressive analysis and clinical nursing judgment and management of families in health and illness. Prerequisite: NURS 5431, 5328 or concurrent enrollment.

5536. ACUTE CARE NURSING II (3-6). Focuses on an interdisciplinary approach to the management and coordination of secondary and tertiary care for adults with complex multisystem dysfunction. Prerequisite: NURS 5435, 5328 or concurrent enrollment.

5539. NEONATAL NURSING (3-6). Focuses on an interdisciplinary approach to the assessment, management, and coordination of secondary and tertiary care of neonates with complex multi-system dysfunction, along with their families. Prerequisite: NURS 5438. Course specific fee: $20. Clinical Nursing Fee: $40. Multimedia Fee: $3.

5543. CHILD HEALTH NURSING II (3-6). Theory and clinical management of school age children and adolescents with acute minor illness, development disabilities and social/environmental problems. Prerequisite: NURS 5442, 5328 or current enrollment.

5546. ADULT AND GERONTOLOGICAL NURSING (3-6). Focus on advanced knowledge in the management of adults (age 12 and older), their families, and their communities with emphasis on special problems of the adolescent, woman, and older adult in a variety of settings. Prerequisite: NURS 5328 and 5420; 5303 or concurrent enrollment.

5630. REGISTERED NURSE FIRST ASSISTANT (3-9). Focuses on the delivery of care to surgical patients in all aspects of the surgical experience: preoperative, intraoperative, and postoperative. The course meets the requirements for RNs to assume the role of a registered nurse first assistant (RNFA). Prerequisite: CNPR or CNOR eligible. CNOR eligible requires proof of eligibility to take the CNOR exam from the Competency and Credentialing Institution.

5631. ADVANCED CLINICAL NURSING PRACTICUM (24-0). Clinical preceptorships in selected health practice sites with opportunities to apply knowledge, skills and concepts in a guided, progressive context of advanced nursing practice. The ratio of credit to clinical hours is 1:4. Prerequisite: NURS 5339 or 5421 or 5422 or 5425 or 5431 or 5434 or 5436 or 5444 or 5546. Good academic standing. Graded F, P, R.

5670. INDEPENDENT STUDY IN NURSING (3-9). Detailed in-depth study in a specific topic area. Topic and mode of study are agreed upon by student(s) and instructor prior to registration. May be repeated for credit when topics vary. Graded F,P,R.

5698. THESIS (6-0). Graded F, R, P.

5926. PSYCHIATRIC-MENTAL HEALTH NURSING III (0-27). Clinical preceptorship in selected practice settings. Application of theory and research in advanced psychiatric-mental health nursing practice. Prerequisite: NURS 5525.

5931. ADVANCED CLINICAL NURSING PRACTICUM (36-0). Clinical preceptorships in selected health practice sites with opportunities to apply knowledge, skills and concepts in a guided, progressive context of advanced nursing practice. The ratio of credit to clinical hours is 1:4. Graded F, P, R. Prerequisite: NURS 5339 or 5421 or 5422 or 5425 or 5431 or 5434 or 5436 or 5444 or 5546.

5937. ACUTE CARE NURSING III (0-27). Clinical preceptorship in selected practice settings. Application of theory and research in advanced acute medical-surgical nursing practice. Prerequisite: NURS 5536.

5944. CHILD HEALTH NURSING III (9-0). Field study in pediatric primary health care in selected clinical settings with guidance from preceptors and faculty. Major focus is integration of theoretical concepts applied to clinical practice. Graded F,P,R. Prerequisite: NURS 5443.

5947. GERONTOLOGICAL/ADULT NURSING III (0-27). Clinical preceptorship in selected primary health practice sites with opportunities to apply knowledge and concepts in a guided, progressive context of gerontological nursing practice. Graded F,P,R. Prerequisite: NURS 5446.

6101. DISSERTATION SEMINAR (1-0). Problem solving and discussion of data collection, analysis and write-up of dissertation.

6170. INDEPENDENT STUDY IN NURSING (1-0). Detailed in-depth study in a specific topic area. Topic and mode of study are agreed upon by student(s) and instructor prior to registration. May be repeated for credit when topics vary. Graded F,R, P.

6190. SPECIAL TOPICS IN NURSING (1-0). Selected topics in advanced nursing. May be repeated for credit as topics change.

6215. CONSULTATION STRATEGIES FOR ACADEMIC LEADERS SERVING DIVERSE AND VULNERABLE POPULATIONS (2-0). Examines the consultation process in higher education; roles and responsibilities of the consultant. Prerequisite: Permission of instructor.

6270. INDEPENDENT STUDY IN NURSING (2-0). Detailed in-depth study in a specific topic area. Topic and mode of study are agreed upon by student(s) and instructor prior to registration. May be repeated for credit when topics vary. Graded F, R, P.

6290. TOPICS IN NURSING (2-0). Selected topics in advanced nursing. May be repeated for credit as topics change.

6301. THEORETICAL EVOLUTION IN SCIENCE (3-0). Philosophies of science and epistemologies, their influence on knowledge development for nursing practice, and strategies for theory development and analysis. Prerequisite: Graduate standing.

6302. ISSUES IN STUDYING THE HEALTH OF CULTURALLY DIVERSE AND VULNERABLE POPULATIONS (3-0). Social and

cultural factors affecting health among sub-populations defined by age, education, gender, ethnicity, culture, religion, occupation, vulnerability, income and geography. Prerequisite: Graduate standing.

6303. CULTURE OF SCIENCE (3-0). Professional, financial, socio-politico, ethical and legal issues associated with the conduct of research and the relationships between research and health policy development and implementation. Prerequisite: Graduate standing.

6304. MEASUREMENT (3-0). Evaluate measurement tools/instruments for studying culturally diverse and vulnerable populations. Prerequisite: NURS 6301 Theoretical Evolution in Science or permission of instructor. Course is predicated on prior learning related to Concept analysis, Basic statistics including correlation.

6305. QUALITATIVE RESEARCH (3-0). Philosophical foundation for and methodological issues in using qualitative approaches for scientific and knowledge development.

6306. RESEARCH DESIGN (3-0). Application of advanced nursing research methods to design studies that improve health outcomes in culturally diverse populations. Prerequisites: NURS 6303 and NURS 6304 or permission of instructor.

6308. RESEARCH SEMINAR (3-0). Implements the research process with faculty guidance. Learning activities based on student and faculty interest. May be repeated to meet student learning needs. Prerequisite: Recommendation of the advisor. Permission of the instructor.

6309. SCIENTIFIC PRODUCTS: PREPARATION DISSEMINATION (DELIVERY) (0-3). Provides experiences in the development of scientific products for dissemination. Prerequisite: Graduate standing.

6310. PROPOSAL DEVELOPMENT SEMINAR (3-0). Development and critique of doctoral dissertation proposal. May be repeated. Prerequisite: Successful completion of diagnostic evaluation, NURS 6308 (Research Seminar).

6311. THE ACADEMIC ROLE IN HIGHER EDUCATION (3-0). Roles and responsibilities of faculty in institutions of higher learning; analysis of issues affecting the professoriate in a rapidly changing society. Prerequisite: Graduate standing.

6313. PREPARING NURSE EDUCATORS TO ASSIST STUDENTS FOR CARE OF DIVERSE AND VULNERABLE POPULATIONS (3-0). Strategies for preparing nurse educators to assist students to care for a changing and diverse population. Prerequisite: NURS 6311 or concurrent enrollment.

6314. CLINICAL RESEARCH: A NURSING PERSPECTIVE (3-0). Focuses on the various components of health services research, and their interface with the discipline and practice of nursing. Prerequisite: NURS 6303 or permission of instructor.

6315. FACULTY INTERNSHIP IN NURSING EDUCATION (0-9). Seminar/practicum in implementation of selected aspect of the faculty role including classroom and clinical teaching at the undergraduate or graduate level; participation in faculty governance and selected faculty scholarly activities. Active guidance and supervision of a regular faculty member. Prerequisite: NURS 6311, 6313, Psychometric Theory Course or permission of instructor.

6316. CLINICAL RESEARCH RESIDENCY (0-9). Seminar/practicum in implementation of selected aspect of the clinical researcher role including research practice in a clinical environment and participation in research activities. Active guidance and supervision of a clinical researcher. Prerequisite: NURS 6314 and 6317.

6317. CONDUCT OF RESEARCH IN CLINICAL ENVIRONMENTS (3-0). Addresses the methodological and sociopolitical influences affecting the conduct of clinical research. Prerequisite: NURS 6314.

6370. INDEPENDENT STUDY IN NURSING (3-0). Detailed in-depth study in a specific topic area. Topic and mode of study are agreed upon by student(s) and instructor prior to registration. May be repeated for credit when topics vary. Graded F, R, P.

6390. TOPICS IN NURSING (3-0). Selected topics in advanced nursing. May be repeated for credit as topics change.

6399. DISSERTATION (3-0). Graded F, R. Prerequisite: Admission to candidacy for the Doctor in Nursing degree.

6402. EDUCATIONAL ADMINISTRATION IN A DIVERSE AND VULNERABLE SOCIETY (1-9). Seminar/practicum in implementation of selected aspects of educational administrator's role; participation in departmental and interdepartmental activities under the guidance of an experienced administrator/mentor. Prerequisite: NURS 6311, 6313, 6315, Psychometric Theory Course or permission of instructor.

6470. INDEPENDENT STUDY IN NURSING (4-0). Detailed in-depth study in a specific topic area. Topic and mode of study are agreed upon by student(s) and instructor prior to registration. May be repeated for credit when topics vary. Graded F, R, P.

6490. TOPICS IN NURSING (4-0). Selected topics in advanced nursing. May be repeated for credit as topics change.

6699. DISSERTATION (6-0). Graded F, R. Prerequisite: Admission to candidacy for the Doctor in Nursing degree.

6999. DISSERTATION (9-0). Graded F, R, P. Prerequisite: Admission to candidacy for the Doctor in Nursing degree.

BSN-to-Ph.D. Admission and Degree Requirements

The applicant for the BSN-to-Ph.D. in Nursing (Ph.D.) degree must meet the general requirements of the Graduate School and have a Bachelor's Degree in Nursing from a program accredited by the National League for Nursing Accrediting Commission (NLNAC) or the Commission on Collegiate Nursing Education (CCNE). Applicants who completed their basic nursing program in another country must submit proof of an equivalent education.

Foreign students whose native language is not English must take the Test of Spoken English (TSE), the Test of English as a Foreign Language (TOEFL), or the International English Language Testing System (IELTS). Persons taking the TSE must make a minimum score of 40. Persons taking the TOEFL must make a minimum score of 550 on the paper-based test, 213 on the computer-based test, and meet the following criteria on the internet-based test: attain a minimum overall score of 79 and achieve the following minimum scores of subtests:

- Writing: 22
- Reading: 20
- Speaking: 21
- Listening: 16

Persons taking the IELTS must make a minimum score of 7.0.

A foreign student wishing to be a graduate research assistant or a graduate teaching assistant will need to take the Spoken English Assessment, offered at UT Arlington, or the Test of Spoken English. The foreign student must also possess a current Texas RN license for admission.

BSN-to-Ph.D. Admission Status Options

The School of Nursing admission criteria are detailed in the BSN-to-Ph.D. Program Requirements table.

Unconditional Admission

Applicants must meet all criteria for unconditional admission.

Probationary Admission

Criteria for probationary admission status are designated in the BSN-to-Ph.D. Program Requirements table. When on probation, students can make no grade lower than a 3.0 in their first 12 semester hours of graduate coursework.

Provisional Admission

An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements.

Deferred Status

Deferred decision is granted when a file is incomplete or when a denied decision is not appropriate.

Denial of Admission

An applicant will be denied admission if he/she has less than satisfactory performance on a majority of admission criteria listed in the table below. The BSN-to-Ph.D. Admissions Committee will make a recommendation for denial.

BSN-to-Ph.D. Options for Master's Level Courses

Students accepted into the BSN-to-Ph.D. program may select a clinical option or an administrative option for the master's level courses. Those in the clinical option will take 29 credit hours at the master's level and 57 hours at the doctoral level. Students in the administrative option will take 24 hours at the master's level and 57 at the doctoral level.

BSN-to-Ph.D. Master's Level Courses

Core Master's Courses taken by all BSN-to-Ph.D. students

5301. Research in Nursing
5327. Analysis of Theories for Nursing
5370. Independent Study

Administration Specialty Master's Courses

5311. Nursing Management in the Health Care Environment
5339. Roles and Functions of the Nurse Administrator
5341. Financial Management in Nursing
5342. Management of Nursing Operations
5343. Nursing Leadership and Complex Health Care Systems

Clinical Specialty Master's Courses

5303. Psychiatric Management in Advanced Nursing Practice
5305. Adult Management in Advanced Nursing Practice I
5306. Pediatric Management in Advanced Nursing Practice
5315. Advanced Pathophysiology for Nursing Practice
5334. Advanced Pharmacology for Nurse Practitioners
5418. Advanced Health Assessment in Nursing Practice
5420. Adult Management in Advanced Nursing Practice II
5442. Primary Care of Pediatric Nursing

Ph.D. in Nursing Courses Taken by all Students

Academic Role Development

NURS 6311 The Academic Role in Higher Education
NURS 6313 Preparing Nurse Educators to Assist Students for Care of Diverse and Vulnerable Populations
NURS 6315 Faculty Internship in Nursing Education
3 hours Psychometric Theory Course approved by Graduate Advisor

Clinical Research

NURS 6314 Clinical Research: A Nursing Perspective
NURS 6316 Clinical Research Residency
NURS 6317 Conduct of Research in Clinical Environment
3 hours of health economics approved by Graduate Advisor

Dissertation

NURS 6399 Dissertation Graded R/F
NURS 6699 Dissertation Graded R/F
NURS 6999 Dissertation Graded R/F

Language Requirement See Ph.D. Section

Diagnostic Evaluation See Ph.D. Section

Comprehensive Examination See Ph.D. Section

Dissertation Defense See Ph.D. Section

The BSN-to-Ph.D. Program in Nursing Admission Requirements		
Admission Criteria	Unconditional	Probationary
Bachelor's Degree in Nursing from a National League for Nursing Accrediting Commission (NLNAC) or American Association of Colleges of Nursing's Commission on Collegiate Nursing Education (CCNE) accredited School of Nursing or equivalent.	Evaluated by Associate Dean for Ph.D. Program in Nursing.	Evaluated by Associate Dean for Ph.D. Program in Nursing.
GPA on all bachelor's coursework.	3.0 GPA on a 4.0 scale	3.0 GPA on a 4.0 scale
GRE	GRE with a total minimum score of 500 on verbal; 500 on quantitative; 500/4 on analytical/analytical writing scores*	Verbal: 400-490; Quantitative: 400-490; Analytical Writing: 3.0-3.5; Analytical: 400-490 (Based on GPA/GRE ratio)
For international students, TSE (Test of Spoken English) or TOEFL (Test of English as a Foreign Language) or IELTS (International English Language Testing System)	TSE: Score of 40 or higher or TOEFL: Minimum of 550 on paper-based test, 213 on computer-based test, or 79 on the internet-based test and achieve the following minimum scores of subtests: Writing, 22; Speaking, 21; Reading, 20; and Listening, 16. IELTS minimum score of 7.0.	TSE: Score of 40 or higher or TOEFL: Minimum of 550 on paper-based test, 213 on computer-based test, or 79 on the internet-based test and achieve the following minimum scores of subtests: Writing, 22; Speaking, 21; Reading, 20; and Listening, 16. IELTS minimum score of 7.0.
Graduate level statistics course with a minimum grade of B.	Implement as stated	
Interview	7 or higher on rating scale of 1-10	6 or less on rating scale of 1-10 Evaluated by Admissions Committee
Written statement of goals.	7 or higher on rating scale of 1-10	6 or less on rating scale of 1-10 Evaluated by Admissions Committee
Professional liability insurance.	Evaluated by Associate Dean for Ph.D. Program in Nursing.	Evaluated by Associate Dean for Ph.D. Program in Nursing.
Current license as a RN; license in the state where student is participating in clinical activities.	Evaluated by Associate Dean for Ph.D. Program in Nursing.	Evaluated by Associate Dean for Ph.D. Program in Nursing.
Two years of clinical experience.	Evaluated by Associate Dean for Ph.D. Program in Nursing.	Evaluated by Associate Dean for Ph.D. Program in Nursing.
Immunizations required by the School of Nursing.	Evaluated by Associate Dean for Ph.D. Program in Nursing.	Evaluated by Associate Dean for Ph.D. Program in Nursing.
Criminal background check prior to clinical and research activities in health care agencies, which satisfies the Dallas/Fort Worth Hospital Council and the Texas Board of Nurse Examiners.	Evaluated by Associate Dean for Ph.D. Program in Nursing.	Evaluated by Associate Dean for Ph.D. Program in Nursing.
Drug screen prior to clinical and research activities in health care agencies, which satisfies the Dallas/Fort Worth Hospital Council and the Texas Board of Nurse Examiners.	Evaluated by Associate Dean for Ph.D. Program in Nursing.	Evaluated by Associate Dean for Ph.D. Program in Nursing.
Demonstration of proficiency in use of computer for word processing, spreadsheet development, and data and text file creation and manipulation.	Evaluated by Associate Dean for Ph.D. Program in Nursing.	Evaluated by Associate Dean for Ph.D. Program in Nursing.

The College of Science

Dean: Paul Paulus, Ph.D.
206 Life Science • Box 19047 • 817.272.3491 • www.uta.edu/cos

Mission and Philosophy

The College of Science graduate programs are committed to excellence in graduate education and research and contribute, along with other institutions in this country and throughout the world, to the expansion of scientific knowledge. Graduates of our programs are highly trained and educated scientists who will be able to contribute to the economic and social well-being of our state and nation.

Overview

With outstanding departments of Biology, Chemistry and Biochemistry, Earth and Environmental Sciences, Mathematics, Physics and Psychology, the College of Science offers comprehensive graduate studies with our world class faculty and research programs. In addition to providing our students with strong core training in the physical and life sciences, we have a graduate program in Materials Science and Engineering and offer specialized Masters degrees for educators to expand their core science training. Interdisciplinary programs and Research Centers provide students with opportunities to span disciplines, and student research activities are complemented by excellent research facilities and state-of-the-art instrumentation. The College and Departments host a series of seminars to further expose our students to cutting edge science developments.

Master's degrees are offered in all of our departments, and we award Ph.D. degrees in Quantitative Biology, Applied Chemistry, Environmental and Earth Sciences, Mathematical Sciences, Mathematics, Applied Physics, Experimental Psychology, and Materials Science and Engineering. For application and entrance requirements, or more on our graduate programs, please call us or visit our Web site at **www.uta.edu/cos.**

Scholastic Activity and Research Interests of the Faculty

Biology

The Department of Biology has a wide array of research programs ranging from molecular through ecosystem levels of integration. The program boasts strengths in ecology and systematics, evolution, microbiology, genomics, and molecular biology, and has active funding from a variety of private and public agencies. The department also hosts centers for genomics, biological macrofouling, electron microscopy and a collection of vertebrates. The research program emphasizes quantitative aspects of biology and provides students with strong training in statistics and experimental design.

Chemistry and Biochemistry

Research programs include synthetic work on natural products, medically active agents, novel ligands, new catalysts, luminescent materials, photocatalysts, supramolecular and metallosupramolecular compounds, molecular magnetism, molecular recognition, stabilization of reactive intermediates, solar energy conversion and electrically conducting polymers. Biochemical research includes studies of enzymology and molecular biology of bacterial metabolism, and studies on problems involved in anticancer therapy. Physical, analytical and electrochemical research includes studies of colloids and surfaces, electrode modification through thin film surface deposition, MALDI mass spectrometry and characterization of the electrical properties of polymers and other materials. Theoretical studies involve both a major computational program applying molecular orbital theory to a variety of problems.

Earth and Environmental Sciences

Department research has a strong orientation toward the application of geochemistry, oceanography, geophysics and paleobiology to earth resources and the environment. Current research interests include analysis and modeling of geologic deformational structures, biostratigraphy of accreted terranes of the Pacific Northwest and the middle Permian of West Texas, sedimentology, paleoclimatology, hydrology, fluvial geomorphology, environmental health, and plate tectonics.

Mathematics

Algebra: homological theory of commutative Noetherian rings; noncommutative algebra using geometric methods: symbolic computations.

Differential Equations, Integral Equations and Dynamical Systems: geometric study of integrable Hamiltonian systems; stability and instability of solitary waves; nonlinear dispersive waves; free boundary problems related to phase transition and multi-fluid flow; stochastic differential equations; control theory.

Cooperative Game Theory: semivalues, least square values, properties, potentials and computation; the inverse problem.

Geometry: birational algebraic geometry and Mori theory; differential geometry and inverse spectral geometry; finite geometry related to nonassociative division algebras.

Mathematical Biology: mathematical modeling of microbial populations, biofilms and competition dynamics; population biology and epidermiology; neuronal dynamics.

Mathematical Statistics, Probability Theory and Stochastic Process: multivariate analysis, statistical inference, sample survey and statistical process control; stochastic processes and applications to stochastic differential equations, random graphs, path integrals, quantum mechanics.

Mathematical Education: mathematics program development, impact of reform mathematics learning strategies on mathematics teaching, mathematics problem solving for teaching.

Numerical Analysis: numerical solutions to ordinary and partial differential equations; moving grid, multigrid and multilevel adaptive methods; fluid dynamics (mechanics); numerical simulation and scientific computation; numerical combustion; software development.

Physics

Current research in the department is primarily in the areas of condensed matter physics, materials science and high energy physics. The theoretical condensed matter group is engaged in cluster, electron transport, electronic structure, molecular dynamics and path integral computations having relevance to the chemical, electrical and magnetic properties of surfaces, metals and semiconductors. The experimental condensed matter group is engaged in studies of diamond coatings, magnetic multilayers, metals, semiconductors and surfaces using electron, positron, optical and magnetic resonance spectroscopies. The experimental high energy group is involved in collider experiments at Fermilab, Brookhaven Laboratory and CERN to study QCD and to search for supersymmetry and other physics beyond the standard model. Other active research areas include high energy theory, optics, parallel computing and statistical physics.

Psychology

Expertise and research activity include animal behavior, animal and human learning, cognitive processes, social psychology, psychobiology and developmental psychology. Current research interests include group brainstorming, verbal memory and neuropsychology, applied psychological measurement, pain systems, decision processes, naturalistic social cognition, stress, genetic and hormonal determinants of aggressive and defensive behaviors and parent-offspring interactions, sea turtle behavior, and infant mental representation of objects.

Science Education

The Master of Arts in Interdisciplinary Science (MAIS), a 36 credit hour degree program without a thesis requirement, was designed and developed by science teachers for science teachers. The program will help science educators strengthen and update their knowledge of content in two or more of the following cognate areas: biology, chemistry, geology, mathematics, and physics. In addition to enhancing content knowledge, the courses will help educators develop teaching strategies that lead to improved student learning, implement high quality instructional materials, and develop skills in using various strategies for assessing student learning. The MAIS degree will serve the needs of classroom teachers, content-area and staff development specialists, curriculum developers, program directors, school administrators, college/university faculty, and educators from informal science institutions who have responsibility for designing, delivering, evaluating, and/or continuously improving standards-based science, mathematics, and technology instruction for students, prekindergarten through the undergraduate degree.

While engaging in the coursework, educators will become learners themselves to deepen their own mastery of scientific and/or mathematical content. The laboratory-based learning activities in the program will help science educators see teaching as less a matter of knowledge transfer and more as an activity of facilitation in which knowledge is generated, content is investigated in depth, and meaning is developed from experience. Graduates of the program will take their place as master science educators who are recognized as proven practitioners in delivering rigorous and relevant instruction and are valued as effective coaches, mentors, and teacher trainers.

Master of Science Degrees

Biology
Chemistry
Environmental and Earth Sciences (Both Thesis and Non-thesis)
Geology (Both Thesis and Non-thesis)
Mathematics
Physics
Psychology

Master of Arts Degree

Interdisciplinary Science (Non-thesis)

Doctoral Degrees

Chemistry
Experimental Psychology
Physics and Applied Physics
Quantitative Biology
Mathematics
Environmental and Earth Sciences

Department of Biology

www.uta.edu/biology

Areas of Study and Degrees

Biology
M.S.
Quantitative Biology
Ph.D.
Mathematical Sciences
Ph.D.
(See Interdepartmental and Intercampus Programs.)

Master's Degree Plans

Thesis and Non-Thesis

Chair

Jonathan A. Campbell
337 Life Science
817.272.2871

Graduate Advisor

Daniel Formanowicz
337 Life Science
817.272.2422

Graduate Faculty

Professors
Campbell, Chippindale, Chrzanowski, Downum, Formanowicz, Frye, Grover, McMahon, Neill, Robinson

Associate Professors
Bernard, Gough, Passy

Assistant Professors
Betran, Chang, Christensen, de la Casa Esperon, Demuth, Feschotte, Fondon, Melotto, Michalak, Mydlarz, Pires da Silva, Pritham, Rodrigues, Roner, Smith

Objective

The program leading to the degree of Master of Science in biology is designed to provide graduate education which will prepare students for vocations in industry, government, and teaching, and to pursue further graduate education leading to the doctorate. The doctoral program is designed to train students to apply sophisticated quantitative techniques to solving basic and applied problems in biology. Students in this program will attain substantially greater quantitative skills than in traditional doctoral programs in the biological sciences, providing them with a competitive advantage in business, industry, government, and academia.

Admission

The following are minimal requirements for entrance into the graduate program in Biology. However, satisfying or exceeding these requirements does not guarantee admission to the program. Admission to the program is determined solely by the Biology Graduate Studies Committee and the Graduate School and is based on an evaluation of all pertinent aspects of an applicant's record.

Master of Science

Admission status in the Master of Science program is determined as follows.

Unconditional Admission

Decisions are based on consideration of all the information listed below and are not based on any single criterion alone.

- A Bachelor's degree in Biology or a Bachelor's degree in some other discipline with at least 12 hours of advanced level coursework (junior or senior level courses) in Biology.
- A minimum undergraduate GPA of 3.0 on a 4.0 scale, as calculated by the Graduate School. Applicants overall GPA in the Sciences and within Biology are also considered.
- A satisfactory score on the Verbal and Quantitative sections of the Graduate Record Exam. Successful students tend to have a minimum combined total score of 1000 on the Verbal and Quantitative sections, with strong performance on the Quantitative section of the GRE exam.
- Favorable letters of recommendation from at least three individuals able to assess the applicant's potential for success in graduate school.
- Evidence of previous research experience may also be considered.
- International students whose native language is not English must provide a score on the Test of Spoken English (TSE) of at least 45, a minimum score of 23 on the Speaking portion of the TOEFL iBT exam or a minimum score of 7 on the Speaking portion of the IELTS exam. See the following Web site for complete details: **http://orgs.uta.edu/pdfs/Prospective/Instructions_Intl.pdf**

Denial of Admission

A candidate may be denied admission if they have less than satisfactory performance on a majority of the admission criteria listed above.

Probationary Admission

If an applicant does not meet a majority of standards for unconditional admission outlined above, they may be considered for pro-

bationary admission after careful examination of their application materials. Probationary admission requires that the applicant receive a B or better in their first 12 hours of graduate coursework at UT Arlington.

Deferred and Provisional Admission

A deferred application decision may be granted when a file is incomplete or when a denied decision is not appropriate. An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission.

Fellowships and Scholarships

Students that are unconditionally admitted will be eligible for available scholarship and/or fellowship support. Award of scholarships or fellowships will be based on consideration of the same criteria utilized in admission decisions. To be eligible, candidates must be new students coming to UT Arlington in the Fall semester, must have a GPA of 3.0 in their last 60 undergraduate credit hours plus any graduate credit hours as calculated by the Graduate School, and must be enrolled in a minimum of 6 hours of coursework in both long semesters to retain their fellowships.

Doctor of Philosophy

Students interested in pursuing the Ph.D. in the Biology Department may apply for the B.S. - Ph.D. Track or the doctoral program directly depending on their background. The B.S. - Ph.D. Track is the point of entry into doctoral studies for students with a Bachelor's degree in Biology, but without 30 hours of graduate level coursework in Biology or a master's degree in Biology. Students who have already accomplished these goals may apply directly for the doctoral program as Ph.D. students. Degree requirements are the same for both groups (see below).

B.S. - Ph.D. Track Doctoral Students

Admission status in the B.S. - Ph.D. Track program is determined as follows.

Unconditional Admission

Decisions are based on consideration of all the information listed below and are not based on any single criterion alone.

- A Bachelor's degree in Biology or a Bachelor's degree in some other discipline with at least 12 hours of advanced level coursework (junior or senior level courses) in Biology.
- A minimum undergraduate GPA of 3.0 on a 4.0 scale, as calculated by the Graduate School. Applicants overall GPA in the Sciences and within Biology are also considered.
- A satisfactory score on the Verbal and Quantitative sections of the Graduate Record Exam. Successful students tend to have a minimum combined total score of 1000 on the Verbal and Quantitative sections, with strong performance on the Quantitative section of the GRE exam.
- Favorable letters of recommendation from at least three individuals able to assess the applicant's potential for success in graduate school.
- Evidence of previous research experience may also be considered.
- International students whose native language is not English must provide a score on the Test of Spoken English (TSE) of at least 45, a minimum score of 23 on the Speaking portion of the TOEFL iBT exam or a minimum score of 7 on the Speaking portion of the IELTS exam. See the following Web site for complete details: **http://orgs.uta.edu/pdfs/Prospective/Instructions_Intl.pdf**

Denial of Admission

A candidate may be denied admission if they have less than satisfactory performance on a majority of the admission criteria listed above.

Probationary Admission

If an applicant does not meet a majority of standards for unconditional admission outlined above, they may be considered for probationary admission after careful examination of their application materials. Probationary admission requires that the applicant receive a B or better in their first 12 hours of graduate coursework at UT Arlington.

Deferred and Provisional Admission

A deferred application decision may be granted when a file is incomplete or when a denied decision is not appropriate. An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission.

Fellowships and Scholarships

Students that are unconditionally admitted will be eligible for available scholarship and/or fellowship support. Award of scholarships or fellowships will be based on consideration of the same criteria utilized in admission decisions. To be eligible, candidates must be new students coming to UT Arlington in the Fall semester, must have a GPA of 3.0 in their last 60 undergraduate credit hours plus any graduate credit hours as calculated by the Graduate School, and must be enrolled in a minimum of 6 hours of coursework in both long semesters to retain their fellowships.

Ph.D. Students

Admission status in the doctoral program is determined as follows.

Unconditional Admission

Decisions are based on consideration of all the information listed below and are not based on any single criterion alone.

- A master's degree in Biology or at least 30 hours of graduate level coursework in Biology.
- A minimum undergraduate GPA of 3.0 on a 4.0 scale, as calculated by the Graduate School. If an Applicant has a Master's degree, the GPA from their Bachelor's degree, as calculated by the Graduate School, will also be considered. If they have 30 hours of graduate coursework but no degree, the GPA from that 30 hours, as calculated by the Graduate School, will also be considered.
- A satisfactory score on the Verbal and Quantitative sections of the Graduate Record Exam. Successful students tend to have a minimum combined total score of 1100 on the Verbal and Quantitative sections, with strong performance on the Quantitative section of the GRE exam.
- Favorable letters of recommendation from at least three individuals able to assess the applicant's potential for success in a doctoral program in quantitative biology.
- Evidence of previous research experience including publications resulting from previous graduate work may also be considered.

- International students whose native language is not English must provide a score on the Test of Spoken English (TSE) of at least 45, a minimum score of 23 on the Speaking portion of the TOEFL iBT exam, or a minimum score of 7 on the Speaking portion of the IELTS exam. See the following Web site for complete details: **orgs.uta.edu/pdfs/Prospective/Instructions_Intl.pdf**

Denial of Admission

A candidate may be denied admission if they have less than satisfactory performance on a majority of the admission criteria listed above.

Probationary Admission

The Department of Biology does not as a matter of course admit doctoral students on a probationary basis. Under exceptional circumstances, an applicant that does not meet the standards for unconditional admission outlined above, may be considered for probationary admission after careful examination of their application materials. Probationary admission requires that the applicant receive a B or better in their first 12 hours of graduate coursework at UT Arlington.

Deferred and Provisional Admission

A deferred application decision may be granted when a file is incomplete or when a denied decision is not appropriate. An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission.

Fellowships and Scholarships

Students that have no provisional admission conditions to meet will be eligible for available scholarship and/or fellowship support. Award of scholarships or fellowships will be based on the same criteria utilized in admission decisions. To be eligible, candidates must be new students coming to UT Arlington in the Fall semester, must have a GPA of 3.0 in their last 60 undergraduate credit hours plus any graduate credit hours as calculated by the Graduate School, and must be enrolled in a minimum of 6 hours of coursework in both long semesters to retain their fellowships.

Degree Requirements

Supporting work outside the student's major area may be taken in botany, chemistry, geology, mathematics, microbiology, physics, and zoology. Approved courses in city and regional planning, civil engineering, environmental science and engineering, philosophy, psychology, and sociology may also be taken in support of the student's program. Subject to written approval by the Graduate Advisor and within the limitations stated in the General Graduate School Regulations, a student may take up to nine hours of coursework from among courses listed under Biology at the 3000 or 4000 levels.

Master of Science

Non-thesis and thesis options are offered. The non-thesis option is designed to meet the needs of practicing teachers or those intending to enter the teaching profession. Students enrolled in the non-thesis option are required to complete 36 hours, including 24 hours of formal coursework in biology plus two hours of 5101, 5391, and sufficient additional hours to complete course requirements. Students enrolled in the thesis option are required to complete 30 hours, including 18 hours of formal coursework (of which BIOL 5314 is required), two hours of 5101, 5698, and sufficient additional hours to complete degree requirements.

Doctor of Philosophy

The degree of Doctor of Philosophy in Quantitative Biology requires distinguished attainment both in scholarship and in research. In addition to meeting the minimum requirements of a planned course of study, the ultimate basis for conferring the degree must be the demonstrated ability to do independent and creative work and the exhibition of a profound grasp of the subject matter within the field.

Mathematics: Students will be expected to have (or complete during their first year of residence) a strong quantitative background including formal courses in differential and integral calculus, and at least one mathematics course beyond calculus (e.g., differential linear equations, linear algebra).

Course Requirements: A total of 60 hours of coursework should normally be completed including 18 hours of required courses, 12 hours of electives, and 30 hours of seminar and research courses. All students in the program are required to take BIOL 5314 (Biometry), BIOL 5361 (Advanced Biometry), and BIOL 5362 (Experimental Design and Analysis). Students must take 9 hours from among courses in quantitative biology including: BIOL 5305 (Techniques in Microbial and Molecular Genetics), BIOL 5312 (Advanced Genetics), BIOL 5316 (Advanced Evolutionary Biology), BIOL 5326 (Wetlands Ecology), BIOL 5327 (Quantitative Ecological Analysis), BIOL 5328 (Landscape Ecology), BIOL 5333 (Biological Modeling), BIOL 5335 (Essentials of Genomics), BIOL 5336 (Molecular Evolution), BIOL 5337 (Behavioral Ecology), BIOL 5350 (Conservation Biology), BIOL 5364 (Population Genetics), BIOL 5365 (Image Analysis), or BIOL 5367 (Theoretical Systematics). Twelve hours of electives may be selected by students under supervision of their dissertation committee from among courses listed below in the department's course offerings. Finally, 30 hours of seminars and research, including at least two hours of 5101 and 9 hours of dissertation in the final semester (BIOL 6999), are required from among the following courses: BIOL 5101, 5200, 5291, 5391, 5193-5693, 5398, 5698, or 5998, or BIOL 6191, 6291, 6391, 6491, 6591, or 6691 (can be repeated for credit).

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Biology (BIOL)

5101. SPECIAL TOPICS IN BIOLOGY (1-0). Seminar on significant biological research. May be repeated for credit. Prerequisite: consent of the instructor.

5102. PRESENTATION METHODS (1-0). Introduction on preparation of scientific talks and poster presentations, including graphics, biological illustration, banner making, preparation of graphics slides and scientific photography.

5104. GRANT PROPOSAL WRITING (1-0). Methods of preparation of research proposals to granting agencies, including: use of library research facilities; standard proposal formats; elements of successful proposals; survey of funding agencies in the biological sciences.

5193. RESEARCH IN BIOLOGY (1-0). Conference course in which the student undertakes intensive investigation of topics under the supervision of a staff member. Prerequisite: consent of the instructor. Graded P/F/R.

5291. INDIVIDUAL PROBLEMS IN BIOLOGY (2-0). Individual research projects supervised by a faculty member. Prerequisite: consent of the instructor.

5293. RESEARCH (2-0).

5301. LABORATORY ROTATION (6-0). This course is an elective designed to enable students to choose a major advisor and laboratory. Rotations among two or three faculty laboratories will familiarize students with faculty research interests, sharpen individual research skills, and expose students to different study systems, instruments, and research methods. May only be taken once for credit by MS students; may be repeated for credit once by Ph.D. students.

5302. MICROBIAL GENETICS (3-0). Consideration of the nature, expression and regulation of the genetic processes in microorganisms. Prerequisites: BIOL 2451 and 3315 or consent of the instructor.

5303. MOLECULAR GENETICS (3-0). Study of molecular genetics presentation of quantitative methods used in the design of experiments, collection and analysis of data associated with research in population, community and landscape ecology with emphasis on eucaryotic systems including DNA structure and chromosome arrangement: molecular evolution, and gene regulation and expression. Prerequisites: BIOL 3315 or consent of the instructor.

5304. VIROLOGY (3-0). The nature, reproduction and host-cell interactions of viruses and animals. Emphasizes molecular aspects of viral replication and the molecular basis of pathogenesis. Prerequisite: consent of the instructor.

5305. TECHNIQUES IN MICROBIAL AND MOLECULAR GENETICS (0-5). Laboratory based techniques course focusing on current methods in microbial and molecular genetics. Prerequisites: BIOL 4302 or equivalent and consent of the instructor.

5308. GENOME STRUCTURE AND DYNAMICS (3-0). This course will describe how genes and genomes are organized in a variety of species from all kingdoms of life and will provide a detailed overview of the molecular mechanisms underlying the function and evolution of genomes. Particular emphasis will be given to the human genome project and its biomedical implications. Prerequisite: BIOL 3315.

5309. IMMUNOBIOLOGY (3-0). This course is designed to acquaint students with the cellular processes involved in the generation of an immune response. It will provide students with detailed knowledge of the cells and organs of the immune system, their organization and diversity and their specialized functions at different anatomical locations. The importance of immune cell receptors and cytokines in cellular interactions and co-ordination of immunological mechanisms is also emphasized.

5310. SELECTED TOPICS IN BIOLOGY (3-0). Topics may vary depending on the needs and interests of the students. May be repeated for credit. Prerequisite: consent of the student's thesis committee and the current course instructor.

5311. EVOLUTION (3-0). Study of the origin of living systems and the mechanism of their evolution. Prerequisite: BIOL 3315 or equivalent or consent of the instructor.

5312. ADVANCED GENETICS (3-0). Mechanisms of transmission and function of genetic material. Covers fundamental concepts in transmission genetics including: genotype/phenotype relationships; inheritance; linkage; genome organization; and gene expression. Experimental and quantitative approaches to genetic analyses are emphasized. Prerequisite: consent of the instructor.

5313. EVOLUTION OF DEVELOPMENT (3-0). The diversity of animal and plant forms can largely be traced to evolutionary changes in the genes that control the development of the embryo. Changes in when and where these genes are active have been important in the diversification of body form. A major goal of this course is to provide an interdisciplinary framework for studies related to evolution, genetics, and development. The course will mainly consist of lecturers and seminars; relevant scientific papers will be read and commented on in class. Prerequisite: BIOL 3315.

5314. BIOMETRY (3-0). An examination of statistical methods and procedures in relation to the design of biological experiments and the analysis of their results. Prerequisite: consent of the instructor.

5315. COMMUNITY ECOLOGY (3-0). An investigation of the effects of interspecific interactions on the distribution and abundance of organisms. Prerequisite: consent of the instructor.

5316. ADVANCED EVOLUTIONARY BIOLOGY (3-0). An analysis of existing biological phenomena with regard to their selective advantage in biological systems. Prerequisite: BIOL 5311 or consent of the instructor.

5319. HUMAN GENETICS (3-0). This course will enable students to comprehend the basic principles of genetics applied to human inheritance and disease, to interpret the research strategies aimed to identify and study the genes responsible for diverse functions and traits, as well as to assess the consequences of the genetic technologies in our society.

5320. BIOGEOGRAPHY (3-0). The role of natural and artificial transport, population pressure and limiting agencies are examined in the light of the patterns of distribution of living organisms. Prerequisite: consent of the instructor.

5325. PLANT ECOLOGY (3-0). An introduction to plant ecology including physiological, population, community and ecosystem ecology.

5326. WETLANDS ECOLOGY (3-0). An introduction to wetland ecology including the formation of wetlands, biogeochemistry of wetland soils, hydrology and biotic adaptations to wetland environments.

5327. QUANTITATIVE ECOLOGICAL ANALYSIS (3-0). A presentation of quantitative methods used in the design of experiments, collection and analysis of data associated with research in population, community and landscape ecology.

5328. LANDSCAPE ECOLOGY (3-0). Landscape ecology focuses on the spatial organization of the landscape mosaic and the flows of energy, nutrients, and species among landscape elements and ecosystems.

5330. DEVELOPMENTAL BIOLOGY (3-0). The primary goal of this course is to describe how organismic complexity is generated during embryonic and post-embryonic development. The course will cover current areas of research in developmental biology, which include: the roles of genetic networks, induction events, cell lineage, maternal inheritance, cell-cell communication, and hormonal control in developmental processes in well-suited organisms such as vertebrates, insects, and nematodes.

5333. BIOLOGICAL MODELING (3-0). Computational and mathematical techniques for representing biological processes, including dynamical systems, simulation, and stochastic processes, using examples from ecology, evolution, and other areas of biology. Prerequisite: consent of the instructor.

5335. ESSENTIALS OF GENOMICS (3-0). An integrative approach to genome science, combining elements of genetics, statistics and bioinformatics. Current technologies used in genomics analysis will be presented.

5336. MOLECULAR EVOLUTION (3-0). An exploration of how genes and genomes evolve at the molecular level. The presentation uses the theoretical framework provided by population genetics to analyze molecular biology data.

5337. BEHAVIORAL ECOLOGY (3-0). Introduction to predictive modeling techniques used in studying behavior and ecology of animals. Includes optimization, dynamic optimization, utility theory, and game theory. Prerequisite: consent of the instructor.

5338. ENDOCRINOLOGY (3-0). An exploration of the vertebrate endocrine system with emphasis on cellular origin of hormones, hormone roles in physiological regulation and hormonal mechanisms of cellular action. Prerequisites: BIOL 3301 or 3442 or consent of the instructor.

5341. PRINCIPLES OF NEUROSCIENCE (3-0). Organization and function of the mammalian nervous system including: sensory functions, motor activity, regulation of autonomic function, memory and association. Prerequisites: three hours of advanced physiology courses or consent of the instructor.

5344. AMPHIBIAN BIOLOGY (2-3). Diversity, systematics and behavior of major groups of amphibians. Laboratory includes museum techniques, identification and anatomical study. Prerequisite: consent of the instructor.

5345. ORNITHOLOGY (2-3). Anatomy, physiology, identification, population dynamics and ethology of birds. Laboratory includes field identification, preparation of specimens, and field study techniques. A weekend field trip is required. Prerequisite: consent of the instructor.

5348. ENVIRONMENTAL BIOLOGY (2-3). Examines major environmental problems that affect biological systems with an emphasis on problem solving. Includes a survey of potential employment opportunities for biologists in environmentally related fields. A weekend field trip is required. Prerequisite: consent of the instructor.

5350. CONSERVATION BIOLOGY (3-0). Theory and practice of conservation biology, with emphasis on applications of modern quantitative and molecular genetic techniques to preservation of organisms and habitats. Includes: identification and prioritization of units for protection; conservation genetics; preserve design; public policy; and current case studies. Prerequisites: BIOL 3315 or equivalent or consent of the instructor.

5351. ENVIRONMENTAL MICROBIOLOGY (3-0). Principles, methodology, and practical applications of environmental microbiology. Topics include: habitat and community approaches to environmental microbiology; measures of microbial populations and activities; interactions among microbial communities; role of microorganisms in the origin of mineral resources and pollution and energy flow through microbial communities. Prerequisite: BIOL 3444 or equivalent or consent of the instructor.

5353. SCANNING ELECTRON MICROSCOPY (1-4). Principles and operation of the Scanning Electron Microscope (SEM). Training in the use of the JEOL JSM SEM. Specimen preparation for SEM included in the lectures and laboratory. Open to non-biologists. Prerequisite: consent of the instructor.

5354. LIMNOLOGY (3-0). The study of biotic and abiotic components of inland waters. Prerequisite: consent of the instructor.

5361. ADVANCED BIOMETRY (3-0). Introduction to various computerized statistical application packages. Topics include multiple regression analysis, path analysis, partial correlation, residual analysis, and various techniques useful for data analysis. Prerequisite: BIOL 5314 or consent of the instructor.

5362. EXPERIMENTAL DESIGN (3-0). Various analysis of variance models will be explored including hierarchic models, multiway factorial models, Latin square designs, split plots designs, and incomplete block designs. Nonparametric methodologies and analysis of covariance techniques will also be presented. Prerequisite: BIOL 5314 or consent of the instructor.

5364. POPULATION GENETICS (3-0). The genetics of evolution with emphasis on measuring, predicting, and modeling genetic change in populations. Prerequisite: consent of the instructor.

5365. IMAGE ANALYSIS (2-3). Quantitative methods used in the analysis of microscopical and other types of biological images. Images studied will be obtained from light and electron micrographs, energy dispersive electron analysis maps and normal, aerial, and laboratory photography. Prerequisites: consent of the instructor. Prerequisite: consent of the instructor.

5367. THEORETICAL SYSTEMATICS (3-0). Introduction to the study of organismal diversity and evolutionary relationships. Emphasizes quantitative methods for phylogeny reconstruction, and interpretation and application of molecular data. Prerequisite: BIOL 3315 and BIOL 3339 or equivalents, or consent of the instructor.

5391. INDIVIDUAL PROBLEMS IN BIOLOGY (3-0). Individual research projects supervised by a faculty member. Prerequisite: consent of the instructor.

5393. RESEARCH IN BIOLOGY (3-0). Conference course in which the student undertakes intensive investigation of topics under the supervision of a staff member. Prerequisite: consent of the instructor. Graded P/F/R.

5398. THESIS (3-0). Graded R/F only. Prerequisite: consent of faculty.

5442. EXPERIMENTAL ANIMAL PHYSIOLOGY (3-3). An integrative study of physiological mechanisms at molecular, cellular, tissue, organ and organismal levels. Focuses on nervous system and neuronal regulation of major physiological systems (i.e., cardiovascular, ventilatory, muscular) and responses to environmental variables. Laboratory complements lecture, stressing physiological techniques and experimental design, computer data acquisition, and data analysis and presentation. Prerequisite: consent of the instructor.

5493. RESEARCH (4-0).

5593. RESEARCH (5-0).

5693. RESEARCH IN BIOLOGY (6-0). Conference course in which the student undertakes intensive investigation of topics under the supervision of a staff member. Prerequisite: consent of the instructor. Graded P/F/R.

5698. THESIS (6-0). Graded P/F/R. Prerequisite: consent of faculty.
5998. THESIS (9-0). Graded P/F/R. Prerequisite: consent of faculty.
6191. ADVANCED RESEARCH (1-0). Faculty supervised individual research. May be repeated for credit. Graded P/F/R.
6291. ADVANCED RESEARCH (2-0). Faculty supervised individual research. May be repeated for credit. Graded P/F/R.
6391. ADVANCED RESEARCH (3-0). Faculty supervised individual research. May be repeated for credit. Graded P/F/R.
6399. DISSERTATION (3-0). 6399 and 6699 graded R/F only; 6999 graded P/F/R. Prerequisite: admission to candidacy for the degree Doctor of Philosophy in Quantitative Biology.
6491. ADVANCED RESEARCH (4-0). Faculty supervised individual research. May be repeated for credit. Graded P/F/R.
6591. ADVANCED RESEARCH (5-0). Faculty supervised individual research. May be repeated for credit. Graded P/F/R.
6691. ADVANCED RESEARCH (6-0). Faculty supervised individual research. May be repeated for credit. Graded P/F/R.
6699. DISSERTATION (6-0). 6399 and 6699 graded R/F only; 6999 graded P/F/R. Prerequisite: admission to candidacy for the degree Doctor of Philosophy in Quantitative Biology.
6999. DISSERTATION (9-0). 6399 and 6699 graded R/F only; 6999 graded P/F/R. Prerequisite: admission to candidacy for the degree Doctor of Philosophy in Quantitative Biology.

Department of Chemistry and Biochemistry

www.uta.edu/chemistry

Areas of Study and Degrees

Chemistry
M.S., Ph.D.
Mathematical Sciences
Ph.D.
(See Interdepartmental and Intercampus Programs.)

Master's Degree Plans

Thesis, Thesis Substitute and Non-Thesis

Chair

Sandy Dasgupta
130A Chemistry and Physics Building
817.272.3171
dasgupta@uta.edu

Graduate Advisor

Zoltan Schelly
356 Chemistry and Physics Building
817.272.3803

Graduate Faculty

Professors
Armstrong, Bellion, Bobbitt, Dias, Dasgupta, Elsenbaumer, Lovely, MacDonnell, Pomerantz, Rajeshwar, Schelly, Timmons.

Assistant Professors
Foss, Guan, Heo, Kroll, Mandal, O'Brien, Perera, Pierce, Schug

Objective: Master of Science

The objectives of the Chemistry and Biochemistry Department's program leading to the Master of Science degree include (a) developing the individual's ability to do independent research, (b) preparing students for more advanced study in chemistry and (c) providing advanced training to professional chemists and those employed in technical and business areas in which chemistry at this level is necessary for efficient performance. Research areas include analytical chemistry, biochemistry, bioinorganic chemistry, colloid and surface chemistry, electrochemistry, inorganic chemistry, medicinal chemistry, organic chemistry, physical chemistry, polymer chemistry, and theoretical chemistry.

Admission Criteria

In evaluating candidates for admission to its graduate degree programs, the Department of Chemistry and Biochemistry emphasizes the preparedness of the student as evidenced by quality and quantity of coursework and the student's previous research experience. Recommendations from our own faculty, based on firsthand knowledge of the applicant or a faculty member at the applicant's institution, are also very important.

Unconditional Admission

Unconditional admission may be granted under any one of the following options. The minimum undergraduate GPA requirement for all options is 3.0, as calculated by the Graduate School.

Option 1

A satisfactory completion of a Bachelor's degree or equivalent, official transcripts, and GRE scores, and three letters of recommendation. An applicant whose native language is not English must submit a TOEFL score of at least 550 or a score of at least 213 on the computer-based test. The TSE-A (score of 45 or higher) can be substituted for the TOEFL.

Option 2

A satisfactory completion of a Bachelor's degree or equivalent, official transcripts, and a letter of recommendation from a faculty member at the applicant's undergraduate institution, plus a recommendation from a UT Arlington Chemistry and Biochemistry faculty member. An applicant whose native language is not English must submit a TOEFL score of at least 550 or a score of at least 213 on the computer-based test. A TSE-A score of 45 or higher can be substituted for the TOEFL. Those who have completed their undergraduate education in English may be eligible for a TOEFL waiver based on the recommendation letters.

Option 3

A satisfactory completion of a bachelor's degree or equivalent, official transcripts, and a letter of recommendation from a faculty member at the undergraduate institution, plus a recommendation from a UT Arlington Chemistry and Biochemistry faculty member based on a face-to-face interview. An applicant whose native language is not English must submit a TOEFL score of at least 550 or a score of at least 213 on the computer-based test. A TSE-A score of 45 or higher can be substituted for the TOEFL. Those who have completed their undergraduate education in English may be eligible for a TOEFL waiver based on the recommendation letters.

Provisional Admission

An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission.

A deferred decision may be granted when a file is incomplete or when a denied decision is not appropriate.

Probationary Admission

In rare cases, probationary admission may be granted as the result of a substandard performance on one or more of the admission criteria. In this case, the Graduate Advisor will set additional conditions for admission including, but not limited to, additional undergraduate coursework and/or achieving a B or better in the first 9 hours of graduate coursework.

Denial of Admission

A candidate may be denied admission if they have less than satisfactory performance on a majority of the admission criteria described above.

Eligibility for Scholarships/Fellowships

Students that have no provisional admission conditions to meet will be eligible for available scholarship and/or fellowship support. Award of scholarships or fellowships will be based on the same criteria utilized in admission decisions. To be eligible, candidates must be new students coming to UT Arlington in the Fall semester, must have a GPA of 3.0 in their last 60 undergraduate credit hours plus any graduate credit hours as calculated by the Graduate School, and must be enrolled in a minimum of 6 hours of coursework in both long semesters to retain their fellowships. (Students with graduate teaching or research assistantships, however, must be enrolled in a minimum of 9 hours of coursework in both long semesters and 6 hours of coursework in the summer sessions.)

Master's Degree Requirements

A candidate for graduate study must satisfy the general admission requirements of the program.

Master's Degree with Thesis

A minimum of 18 hours in chemistry from courses listed in the Graduate Catalog will be required. Twelve of these hours should be from CHEM 5301 or 5302; 5309; 5304 or 5305 or 5307 or 5311; 5315; 5318 or 5321. Electives may be senior or graduate division courses in a science or engineering subject selected by the candidate with the approval of the graduate advisor.

Master's Degree with Thesis Substitute

Admission to the program requires approval of the Graduate Studies Committee. Minimal registration in a project course (CHEM 5391 or 5691 or CHEM 5392 or 5692) is also required. At the time the degree is awarded the candidate is expected to have completed at least five years of suitable professional experience in an industrial, government, or other chemistry laboratory.

All potential applicants must contact the Graduate Advisor prior to registration.

Master's Degree Non-Thesis

This option requires a minimum of 36 hours of coursework of which at least 24 hours must be in chemistry. All courses must be approved by the graduate advisor.

Objective: Ph.D. in Mathematical Sciences/Chemistry Option

The program leading to the Doctor of Philosophy degree in mathematical sciences/chemistry option is designed primarily to prepare chemists for research and teaching careers which involve the theoretical and mathematical aspects of chemistry. For further details, see Interdepartmental and Intercampus Programs.

Objective: Ph.D. in Chemistry

The program leading to the Doctor of Philosophy degree in Chemistry is designed primarily to prepare doctoral-level chemists for industrial research careers. The student must (1) demonstrate the ability to carry out independent research; and (2) acquire the practical knowledge of the type of research conducted in industry and of the constraints (both practical and philosophical) under which such research is conducted. The areas of research include analytical chemistry, biochemistry, bioinorganic chemistry, colloid and surface chemistry, electrochemistry, inorganic chemistry, medicinal chemistry, organic chemistry, organometallic chemistry, physical chemistry, polymer chemistry, and theoretical chemistry.

Ph.D. Degree Requirements

To be admitted to the Ph.D. program, an applicant must satisfy the general admission requirements of the program and his or her academic record must show preparation for advanced work in chemistry.

Each candidate must complete the following program requirements:

1. Courses for students emphasizing analytical chemistry
   (complete any 3 of the following 4 courses):

   CHEM 5304 Analytical Mass Spectrometry and Spectroscopy
   CHEM 5305 Separation Science
   CHEM 5307 Analytical Electrochemistry
   CHEM 5311 Analytical Chemistry - Concepts and Implementation

   (CHEM 5304 and 5311 are considered as Analytical Chemistry Core Courses)

   Plus any two (2) courses from two divisions outside of analytical chemistry (biochemistry, inorganic, organic, or physical). CHEM 5308 cannot be used to fulfill this requirement. Students who do not have a good instrumentation background should consider taking CHEM 5461 Instrumental Analysis.

   Plus: One of the courses listed in item 7.

2. Courses for students emphasizing biochemistry:

   CHEM 5321 Metabolism and Regulation
   CHEM 5325 Enzymology
   CHEM 5327 Biochemical Genetics

   (CHEM 5321, 5325, 5327 are considered as Biochemistry Core Courses)

   Students emphasizing biochemistry who have not had one full year of General Biochemistry must also take the following courses BEFORE taking CHEM 5321, 5325, and 5327:
   CHEM 5318 Principles of Biochemistry
   or
   CHEM 5319 General Biochemistry I
   CHEM 5320 General Biochemistry II

Plus two from:
CHEM 5203/5180 Quantum Chemistry
CHEM 5309 Organic Chemistry I
CHEM 5315 Inorganic Chemistry
CHEM 5308 Determination of Mol. Structure by Phys. Methods
CHEM 5304 or 5311 (one of the Analytical Core Courses)

Plus: One of the courses listed in item 7.

3. Courses for students emphasizing inorganic chemistry:

CHEM 5315 Inorganic Chemistry
CHEM 5308 Determination of Mol. Structure by Phys. Methods

(CHEM 5315 and 5308 are considered as Inorganic Chemistry Core Courses)

Plus two from:
CHEM 5203/5180 Quantum Chemistry
CHEM 5309 Organic Chemistry I
CHEM 5304 or 5311 (one of the Analytical Core Courses)
CHEM 5318 Principles of Biochemistry

Plus: One of the courses listed in item 7.

4. Courses for students emphasizing organic chemistry:

CHEM 5308 Determination of Mol. Structure by Phys Methods
CHEM 5309 Organic Chemistry I
CHEM 5310 Organic Chemistry II
CHEM 5312 Advanced Organic Synthesis

(CHEM 5308, 5309, 5310, and 5312 are considered as Organic Chemistry Core Courses)

Plus two from:
CHEM 5203/5180 Quantum Chemistry
CHEM 5304 or 5311 (one of the Analytical Core Courses)
CHEM 5315 Inorganic Chemistry
CHEM 5318 Principles of Biochemistry

Plus: one of the courses listed in item 7.

5. Courses for students emphasizing physical chemistry:

CHEM 5301 Physical Chemistry I
CHEM 5302 Physical Chemistry II

(CHEM 5301 and 5302 are considered as Physical Chemistry Core Courses)

Plus three from:
CHEM 5309 Organic Chemistry I
CHEM 5304 or 5311 (one of the Analytical Core Courses)
CHEM 5315 Inorganic Chemistry
CHEM 5318 Principles of Biochemistry

Plus: One of the courses listed in item 7.

6. Courses for students emphasizing polymer chemistry:

All required courses for any of the other emphasis areas 1-5

Plus:
CHEM 5350 Advanced Polymer Chemistry

7. CHEM 6104, 6304 or 6904. Chemistry Internship. Each student is required to spend three months in a nonacademic chemical laboratory; credit may be given for a student's previous industrial research experience.

8. Additional research and elective courses chosen according to the student's dissertation topic and area of specialization under the guidance of the supervising committee.

A course grade may be used to satisfy degree requirements for no more than seven years after the course has been completed.

After admission to the doctoral program the student must successfully complete the appropriate examination(s) required by the faculty of the student's discipline.

A supplementary set of guidelines, published by the Department of Chemistry and Biochemistry, should be consulted.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Chemistry (CHEM)

5101. SEMINAR IN CHEMISTRY (1-0). Two semesters of registration required of all graduate students. May not be counted for credit toward the degree requirements. Every student is expected to present one seminar to the Chemistry Department during the two-semester period. Includes learning how to prepare, present, and defend an oral presentation. Seminar topics are selected with the assistance of the instructor and may include both pure and applied chemistry. Graded P/F only.

5180. QUANTUM CHEMISTRY LABORATORY (0-4). Molecular modeling. Application of various computational techniques to chemical problems, including determination of molecular geometry, conformational analysis, and molecular energetics. Prerequisite: concurrent enrollment in CHEM 5203.

5191. READINGS IN CHEMISTRY (1-0). Conference course which may be repeated for credit, with credit granted according to work performed. Graded P/F/R only. Prerequisite: permission of instructor.

5192. RESEARCH IN CHEMISTRY (1-0). Conference course with laboratory with credit granted according to work performed. May be repeated for credit. Graded P/F/R only. Prerequisite: permission of instructor.

5203. QUANTUM CHEMISTRY (2-0). Molecular quantum mechanics. Fundamental principles of quantum mechanics, with a special emphasis on molecular electronic structure theory. Topics covered include molecular mechanics, semi-empirical and ab initio molecular orbital

theory, density functional theory, calculation of thermodynamic properties and molecular dynamics. Prerequisite: CHEM 3322 or equivalent.

5291. READINGS IN CHEMISTRY (2-0). Conference course which may be repeated for credit, with credit granted according to work performed. Graded P/F/R only. Prerequisite: permission of instructor.

5292. RESEARCH IN CHEMISTRY (2-0). Conference course with laboratory with credit granted according to work performed. May be repeated for credit. Graded P/F/R only. Prerequisite: permission of instructor.

5300. SELECTED TOPICS IN ADVANCED CHEMISTRY (3-0). The area may vary (typically analytical, applied, biological, colloid, environmental, inorganic, organic, physical, polymer, materials, theoretical, etc.) and will be announced in advance. More than one area may be covered simultaneously, in parallel courses offered under different section numbers. May be repeated for credit when area or topics vary. Prerequisite: permission of instructor.

5301. PHYSICAL CHEMISTRY I (3-0). An introduction to the basic principles of quantum mechanics including Schrodinger and Heisenberg formulations, basic postulates, operator algebra, exact solutions of model problems, approximation methods, group theory, and spin systems. Application of quantum mechanics for spectroscopy including time dependent perturbation theory, selection rules, and a survey of electronic, ESR, NMR, rotational, and vibrational spectroscopies. Emphasis will be placed on relevance to molecular structure, chemical dynamics, and materials science.

5302. PHYSICAL CHEMISTRY II (3-0). Thermodynamics, equilibrium, and introduction to non-equilibrium systems. Kinetics of simple and complex reactions. Theories of rate processes and molecular reaction dynamics. Statistical thermodynamics and its relevance to kinetics and spectroscopy.

5304. ANALYTICAL MASS SPECTROMETRY (3-0). This course covers modern aspects of atomic and molecular mass spectrometry. Upon completion of this course, the student will be able to: describe the basic setup and operation of a mass spectrometer; interpret mass spectra from various instruments as a means for qualitative analysis and delineating ionization mechanisms; apply basic knowledge of mass spectrometry for practical problem solving; relate the use of mass spectrometry to his or her own research interests; and compile, present, and explain modern techniques for mass spectrometric research. Written and oral examinations, as well as traditional classroom examinations, will be used to assess student performance. Prerequisite includes CHEM 4461 or equivalent; or permission of instructor.

5305. SEPARATION SCIENCE (3-0). A comprehensive examination of most areas involving the separation of molecules and ions. Theoretical, practical and historical aspects of: distillation, sublimation, liquid-liquid extraction, sold phase extraction, chromatography, electrophoresis, field flow fractionation, membrane/barrier processes, and crystallization will be considered. Students taking this course must have a good basic background in organic chemistry and physical chemistry.

5306. ANALYTICAL SPECTROSCOPY (3-0). This course covers many of the methods of spectrochemical analysis used in the analytical laboratory. At the end of this course, students should be able to: explain the fundamental theory of many spectroscopy methods, including atomic spectroscopy, molecular spectroscopy, UV/Vis spectroscopy, molecular luminescence, and infrared spectrometry, among others; describe basic instrumental components; apply basic statistics (e.g., measurement errors, and calibration methods) for data analysis; and understand the fundamental use and applications of spectroscopy methods for basic research and laboratory measurements. Student performance will be evaluated based on homework assignments, exams, quizzes, and presentations. Prerequisite includes CHEM 4461 or equivalent, or permission of instructor.

5307. ANALYTICAL ELECTROCHEMISTRY (3-0). This course covers modern aspects of electroanalytical chemistry. Upon completion of this course, the student will be able to: understand the concepts of redox potentials and their role in electron transfer, the thermodynamic aspects of electrochemical cells, mass transport in electrochemical systems, and the principles underlying various electroanalytical techniques such as potentiometry, amperometry, coulometry and voltammetry. The instrumental aspects of these techniques will also be addressed, including specialized approaches such as spectroelectrochemistry. The student will be able to relate the use of these analytical techniques to his or her own research needs and interests. Written and oral examinations, as well as traditional classroom examinations, will be used to assess student performance. Prerequisite includes CHEM 4461 or equivalent; or permission of instructor.

5308. DETERMINATION OF MOLECULAR STRUCTURE BY PHYSICAL METHODS (3-0). The use of modern instrumental techniques to determine structure: infrared, ultraviolet, and magnetic resonance spectroscopy, mass spectrometry, optical rotatory dispersion. Emphasis on interpretation of spectra. Prerequisite: CHEM 2322 or equivalent.

5309. ORGANIC CHEMISTRY I (3-0). Bonding, structure, stereochemistry, substituent effects, isotope effects, solvent effects, kinetics, and linear free-energy relationships in determining reaction mechanisms. Acids and bases, orbital symmetry, pericyclic reactions, photochemistry, and nucleophilic substitution reactions. Prerequisites: CHEM 2322 and 3322 or equivalent.

5310. ORGANIC CHEMISTRY II (3-0). A survey of organic reaction mechanisms including addition and elimination reactions, nucleophilic carbon species, carbonyl reactions, electrophilic substitution reactions, rearrangement reactions, electron deficient species, and free radical reactions. Prerequisite: CHEM 5309 or permission.

5311. ANALYTICAL CHEMISTRY - CONCEPTS AND IMPLEMENTATION (3-0). This course familiarizes students with basic electronic design in analytical instrumentation. Familiarization with active and passive components, operational amplifiers, timers, logic gates, and designing analytical instrumentation based on such components, especially in Wet Chemistry. The course covers ionic equilibria and acid-base equilibria and solving complex problems by iterative numerical methods and nonlinear curve fitting using programming in BASIC and MS Excel Solver™. The course covers present day applications of wet chemical analysis, specific methods and instrumentation, practical aspects of automated liquid phase analytical methods including component availability and cost. A design problem, chosen by lottery, will be given to each student early in the semester. The newly acquired knowledge of chemistry and electronics will be used to design a new instrument and present it. Prerequisite: CHEM 4461 or equivalent undergraduate instrumental analysis course.

5312. ADVANCED ORGANIC SYNTHESIS (3-0). Synthetically important reactions, strategy in organic synthesis using retrosynthetic analysis and mechanistic understanding of reactions, synthons, asymmetric synthesis. Prerequisite: CHEM 5310 or permission of instructor.

5315. INORGANIC CHEMISTRY (3-0). Structures, bonding, and properties of main group and transition element compounds including: symmetry, coordination chemistry, reaction mechanisms, organometallic chemistry, and modern characterization techniques. Prerequisite: CHEM 4318 or permission of instructor.

5318. PRINCIPLES OF BIOCHEMISTRY (3-0). Protein and nucleic acids structure, enzyme kinetics, and metabolism related to the human body. The course is intended for students who require biochemistry to support research efforts, or need to satisfy a deficiency before proceeding in the biochemistry graduate program. If CHEM 5318 is used for credit toward a degree, then any of CHEM 5319, 5320, or CHEM 4311, 4312 cannot also be used for credit. Prerequisite: CHEM 2322 or equivalent. A knowledge of physical chemistry is helpful.

5319. GENERAL BIOCHEMISTRY I (3-0). Amino acids, carbohydrates, nucleic acids, enzymes. Obtaining of energy and cellular material from glucose including glycolysis, the TCA cycle, electron transport and oxidative phosphorylation and the pentose phosphate pathway. Either CHEM 5318 or 5319, but not both, may be counted for credit toward degree requirements. Prerequisite: CHEM 2322 or equivalent. A knowledge of physical chemistry is helpful.

5320. GENERAL BIOCHEMISTRY II (3-0). Modes of breakdown and synthesis of fats, oxidative degradation of amino acids and proteins and biosynthesis of carbohydrate, nucleic acids, and protein. Chemical significance of the genetic code. Either CHEM 5318 or 5320, but not both, may be counted for credit toward degree requirements. Prerequisite: one semester of approved biochemistry (CHEM 5319 or equivalent).

5321. METABOLISM AND REGULATION (3-0). Biosynthesis of amino acids, purines, pyrimidines, and complex lipids, including terpenes and steroids, with emphasis on regulation of these pathways. Aspects of more complex metabolic regulation by hormones, second messengers and receptor-mediated endocytosis with emphasis on chemical and structural modifications of proteins involved. Prerequisite: CHEM 5320.

5325. ENZYMOLOGY (3-0). A study of enzymes including structures, reaction mechanisms, regulation, and kinetics. Prerequisite: CHEM 5320.

5327. BIOCHEMICAL GENETICS (3-0). Aspects of the biochemistry of gene expression in prokaryotic and eukaryotic organisms, its regulation and control, together with genetic manipulations, and the methodology of recombinant DNA technology. Prerequisite: CHEM 5320.

5333. THERMODYNAMICS OF MATERIALS (3-0). Applications of thermodynamics to the study of materials, thermodynamic properties of liquid and solid solutions and their relationship to surface and crystalline defects. Also offered as MSE 5320. Prerequisite: permission of instructor.

5350. ADVANCED POLYMER CHEMISTRY (3-0). Polymer synthesis and reactions including condensation, free-radical, ionic, and coordination polymerizations; principles of polymerization including thermodynamics and kinetic considerations; physical characterizations including determinations of absolute molecular weights, relative molecular weights, morphology, glass transitions, and polymer crystallinity; relationships between macromolecular structure, properties, and uses of polymeric materials. Also offered as MSE 5346. Prerequisite: CHEM 2321 and 2322 or permission of instructor.

5391. READINGS IN CHEMISTRY (3-0). Conference course which may be repeated for credit, with credit granted according to work performed. Graded P/F/R only. Prerequisite: permission of instructor.

5392. RESEARCH IN CHEMISTRY (3-0). Conference course with laboratory with credit granted according to work performed. May be repeated for credit. Graded P/F/R only. Prerequisite: permission of instructor.

5398. THESIS (3-0). Graded R/F only. Prerequisite: permission of instructor.

5461. ANALYTICAL INSTRUMENTATION (2-8). Theory of instrumentation and chemical signal source. Practical experiments utilizing atomic and molecular absorption and emission spectroscopy, chromatographic analysis, and electrochemical techniques. Prerequisite: CHEM 3322 or equivalent.

5491. READINGS IN CHEMISTRY (4-0). Conference course which may be repeated for credit, with credit granted according to work performed. Graded P/F/R only. Prerequisite: permission of instructor.

5492. RESEARCH IN CHEMISTRY (4-0). Conference course with laboratory with credit granted according to work performed. May be repeated for credit. Graded P/F/R only. Prerequisite: permission of instructor.

5591. READINGS IN CHEMISTRY (5-0). Conference course which may be repeated for credit, with credit granted according to work performed. Graded P/F/R only. Prerequisite: permission of instructor.

5592. RESEARCH IN CHEMISTRY (5-0). Conference course with laboratory with credit granted according to work performed. May be repeated for credit. Graded P/F/R only. Prerequisite: permission of instructor.

5691. READINGS IN CHEMISTRY (6-0). Conference course which may be repeated for credit, with credit granted according to work performed. Graded P/F/R only. Prerequisite: permission of instructor.

5692. RESEARCH IN CHEMISTRY (6-0). Conference course with laboratory with credit granted according to work performed. May be repeated for credit. Graded P/F/R only. Prerequisite: permission of instructor.

5698. THESIS (6-0). Graded P/F/R only. Prerequisite: permission of instructor.

5998. THESIS (9-0). Graded P/F/R only. Prerequisite: permission of instructor.

6100. TOPICS IN GRADUATE RESEARCH (1-0). Lectures by departmental and university faculty on current chemical research at UT Arlington. All graduate students are required to take this course once. May not be counted toward degree requirements. Graded P/F only.

6102. ISSUES IN MODERN CHEMICAL RESEARCH (1-0). Topics to be discussed include the use of the library, maintenance of a research notebook, ethics in research, aspects of technical writing and presentations, and how research is funded. May not be counted toward degree requirements. Graded P/F only.

6104. CHEMISTRY INTERNSHIP (1-0). Each student is required to spend three months in a nonacademic chemical laboratory; credit may be given for a student's previous industrial research experience. Graded P/F/R only. Prerequisite: permission of Graduate Advisor.

6201. UNIT OPERATIONS (2-0). Survey of measurement and control techniques, and the fundamentals of physical and chemical industrial processes. Prerequisite: CHEM 3322 or equivalent or permission of instructor.

6202. PRINCIPLES OF INDUSTRIAL CHEMISTRY (2-0). Survey of industrial inorganic and organic chemical processes. Prerequisite: permission of instructor.

6203. REGULATORY ASPECTS OF THE CHEMICAL INDUSTRY (2-0). Survey of chemical toxicology, regulatory aspects involved in the chemical industry, industrial safety, patents and patent law.

6304. CHEMISTRY INTERNSHIP (3-0). Each student is required to spend three months in a nonacademic chemical laboratory; credit may be given for a student's previous industrial research experience. Graded P/F/R only. Prerequisite: permission of Graduate Advisor.

6399. DISSERTATION (3-0). Graded R/F only. Prerequisite: admission to candidacy for the degree of Ph.D. in Applied Chemistry.

6699. DISSERTATION (6-0). Graded R/F only. Prerequisite: admission to candidacy for the degree of Ph.D. in Applied Chemistry.

6904. CHEMISTRY INTERNSHIP (9-0). Each student is required to spend three months in a nonacademic chemical laboratory; credit may be given for a student's previous industrial research experience. Graded P/F/R only. Prerequisite: permission of Graduate Advisor.

6999. DISSERTATION (9-0). Graded P/F/R only. Prerequisite: admission to candidacy for the degree of Ph.D. in Applied Chemistry.

Objectives

The M.S. in Geology provides a basic geologic background for students interested in a professional career in geology. With the thesis as a focus, the program integrates coursework and research to give the student not only a broad foundation but also a specific area of competence through participation in the research experience. Special coursework and research in geology, which lead to specialization in the areas of environmental geology or natural resource development, are available in addition to the more traditional areas of specialization.

The M.S. and Ph.D. in Environmental and Earth Sciences are designed to provide graduate students an integrated, multidisciplinary education, nurtured through a carefully tailored degree program requiring a breadth of understanding and mastery of a spectrum of scientific and engineering principles. Among the goals is to provide students who have earned engineering or science undergraduate degrees a common ground for interdisciplinary communications, and understanding of the environment, and competence in a discipline that will enable to evaluate and solve complex environmental problems.

The M.A. in Science Teaching is for K-12 teachers who want to increase their teaching skills and understanding of science in general and earth science in particular.

Spatial Information Systems Certificate includes instruction in the technology of acquiring, managing, analyzing, and displaying information in a spatial context. This technology is a critical component of decision-making in a wide variety of enterprises and includes Geographic Information Systems (GIS) software, the Global Positioning System (GPS), and remotely sensed data from aircraft and satellites.

The Petroleum Geoscience Certificate provides instruction in the geological principles and techniques used in the petroleum industry to explore and produce oil and gas. It is useful for professionals wishing to upgrade their knowledge and skills, and those interested in employment in the petroleum industry. The graduate courses may also be used toward a M.S. degree.

Hazardous Materials and Waste Management Certificate provides professionals who have undergraduate degrees in science or engineering (e.g., Biology, Chemistry, Geology, Civil Engineering or other appropriate degrees) with graduate instruction that will allow them to direct hazardous materials and waste management, treatment and remediation programs. As Hazardous Materials Management is an interdisciplinary subject, the certificate program is designed to provide science and engineering graduates with coursework in appropriate areas outside of their undergraduate major that will provide them with the necessary expertise in this area. The certificate provides students with a postbaccalaureate educational opportunity that is narrower in scope, and shorter in duration than its associated MS graduate degree program in Environmental and Earth Sciences (EES).

Environmental Science Certificate provides professionals who have undergraduate degrees in science (i.e., Biology, Chemistry or Geology) with graduate instruction in Environmental Science as a means of maintaining and promoting their professional development. As Environmental Science is an interdisciplinary subject, the certificate program is designed to provide science graduates with coursework in environmental science in appropriate areas outside of their undergraduate major. The certificate provides students with a post-baccalaureate educational opportunity that is narrower in scope and shorter in duration than its associated MS graduate degree program in Environmental and Earth Sciences (EES).

Department of Earth and Environmental Sciences

www.uta.edu/ees/Graduate_programs.htm

Areas of Study and Degrees

Geology
M.S.

Environmental and Earth Sciences
M.S., Ph.D.

Earth Science Teaching
M.A.
(See Interdepartmental and Intercampus Programs.)

Spatial Information Systems
Certificate

Petroleum Geoscience
Certificate

Master's Degree Plans

Thesis and Non-Thesis

Ph.D. Plans

Dissertation

Chair

John S. Wickham
107 Geoscience
817.272.2987

Graduate Advisors

John M. Holbrook

Graduate Faculty

Professors
Holbrook, M. Nestell, Scotese, Wickham

Assistant Professors
Hu, Hunt, Rowe, Winguth

Adjunct Faculty
Damuth, Eisenstadt, Ellwood, D. Kotila, G. Nestell, E. Rangel, Shanmugam, Standlee

Professors Emeritus
Burkart, Ellwood, McNulty, Reaser, Smith

Admission

Students interested in an M.S. or Ph.D. degrees should apply to the Graduate School for regular admission to a particular degree program. Those applying to a Certificate Program should apply as a Special Student.

There are 3 categories of admission:

Unconditional - all the admission criteria are met and there are no conditions placed on continued enrollment in the program.

Students that are unconditionally admitted can also apply for available scholarship and/or fellowship support. Award of scholarships or fellowships will be based on consideration of the same criteria utilized in admission decisions. To be eligible, candidates must have a GPA of 3.0 in their last 60 undergraduate credit hours plus any graduate credit hours as calculated by the Graduate School, and must be enrolled in a minimum of 9 hours of coursework in both long semesters to retain their fellowships.

Probationary - Applicants who do not meet the standards for unconditional admission may be considered for probationary admission after careful examination of their application materials. Probationary admission normally requires that the applicant receive a B or better in their first 12 hours of graduate coursework at UT Arlington.

Deferred and Provisional Admission - A deferred admission may be granted when an application is incomplete or when a denied decision is not appropriate. An applicant unable to supply all required documentation prior to the admission deadline but whom otherwise appears to meet admission requirements may be granted provisional admission.

International Students

An applicant whose native language is not English must demonstrate a sufficient level of skill with the English language to assure success in graduate studies. Applicants must submit a score of at least 550 on the paper-based TOEFL, a score of at least 213 on the computer-based TOEFL, a minimum score of 40 on the TSE, a minimum score of 6.5 on the IELTS, or a minimum TOEFL iBT total score of 79 with sectional scores that meet or exceed 22 for the writing section, 21 for the speaking section, 20 for the reading section, and 16 for the listening section to meet this requirement.

An applicant holding either a bachelor's or a master's degree from a regionally accredited U.S. college or university is not required to submit a TOEFL, TOEFL iBT, TSE or IELTS score for admission purposes. Any other waivers of the score requirements must be recommended by the applicant's Graduate Advisor and approved by the Dean of Graduate Studies.

Denial of Admission - A candidate may be denied admission if they have less than satisfactory performance on a majority of the admission criteria described above.

Geology Masters Program Admissions Criteria

For unconditional admission, students must demonstrate that they will likely be successful in the graduate program. The department admissions committee uses the following guidelines to make that judgment:

1. A B.S. degree in an Earth Science discipline with the following courses or their equivalent: Mineralogy, Petrology, Structure, Stratigraphy, Field Geology and Geophysics or Paleontology. In addition, students need a year of Chemistry, Biology, Physics and Calculus.
2. A minimum undergraduate GPA of 3.0 on a 4.0 scale, as calculated by the Graduate School.
3. GRE scores are combined with the other measures of achievement to determine admission. Successful students in the past have scored above the 60 percentile on the verbal, quantitative and analytical writing portions. International students have been successful with somewhat lower scores on the verbal and analytical writing portions.
4. Favorable letters of recommendation from the former university instructors.

These are only guidelines and students who do not meet the guidelines in one area may be admitted unconditionally if they are strong in other areas; in addition students may be required to take leveling coursework if there are undergraduate deficiencies.

Environmental and Earth Sciences Master's Program

For unconditional admission a student must meet the following requirements:

1. A B.S. degree in biology, chemistry, geology, mathematics, or engineering. Students with a Bachelor's Degree in other sciences will also be considered, subject to satisfactory completion of courses to make up for deficiencies.
2. A minimum undergraduate GPA of 3.0 on a 4.0 scale, as calculated by the Graduate School.
3. Graduate Record Examination (GRE) scores are considered in admission decisions. Masters students who have succeeded in the Environmental and Earth Sciences Program typically score higher than 380 on the verbal portion of the GRE and higher than 550 on the quantitative portion of the GRE.
4. For applicants whose native language is not English, a minimum score of 550 on the Test of English as a Foreign Language (or an equivalent score on a computer-based test) or a score of 40 on the Test of Spoken English.
5. Favorable letters of recommendation from people familiar with the applicant's academic work.
6. Students may be considered for unconditional admission if further review of their transcripts, recommendation letters, correspondence or direct interactions with Environmental and Earth Sciences faculty, and statement of professional or research interests indicates that they are qualified to enter the Masters Program.

Environmental and Earth Sciences B.S.-Ph.D. Track

For unconditional admission a student must meet the following requirements:

1. A B.S. degree in biology, chemistry, geology, mathematics, or engineering. Students with a Bachelor's Degree in other sciences will also be considered, subject to satisfactory completion of courses to make up for deficiencies.
2. A minimum graduate coursework GPA of 3.0 on a 4.0 scale, as calculated by the Graduate School.
3. Graduate Record Examination (GRE) scores are considered in admission decisions. Doctoral students who have succeeded in the Environmental and Earth Sciences Program typically score higher than 460 on the verbal portion of the GRA and higher than 600 on the quantitative portion of the GRE.
4. A statement must be submitted to the program detailing the applicant's specific research interests and identifying the

faculty member who is requested as supervisor of the dissertation research.
5. Favorable letters of recommendation from people familiar with the applicant's academic work and/or professional work.
6. Students may be considered for unconditional admission if further review of their transcripts, recommendation letters, correspondence or direct interactions with Environmental and Earth Sciences faculty, and statement of research interests indicates that they are qualified to enter the B.S.-Ph.D. Track.

Probationary admission will not be allowed for the B.S.-Ph.D. Track. Applicants not meeting all requirements for unconditional admission may be admitted to the M.S. program, and may then apply for admission to the Ph.D. program after completing 30 hours of coursework.

For provisional admission a student must meet the following requirements:

1. Enrollment in a B.S. degree program in biology, chemistry, geology, mathematics, or engineering, with expected date of completion before enrollment in the B.S.-Ph.D. Track. Students with a Bachelor's Degree in other sciences will also be considered, subject to satisfactory completion of courses to make up for deficiencies.
2. Complete and satisfactory credentials must be received by the Graduate School before the end of the semester in which the student has registered in a provisional status. A student will not be permitted to enroll in the Graduate School with a provisional status for more than one semester. Provisional admission does not guarantee subsequent admission on an unconditional basis. International applicants residing outside of the United States at the time of application may not be admitted on a provisional basis. A student may not hold an assistantship while in provisional status.

Environmental and Earth Sciences Doctoral Program

For unconditional admission a student must meet the following requirements:

1. A Masters Degree or at least 30 hours of graduate coursework in environmental science, biology, chemistry, geology, mathematics or engineering.
2. A minimum graduate coursework GPA of 3.0 on a 4.0 scale, as calculated by the Graduate School.
3. Graduate Record Examination (GRE) scores are considered in admission decisions. Doctoral students who have succeeded in the Environmental and Earth Sciences Program typically score higher than 460 on the verbal portion of the GRE and higher than 600 on the quantitative portion of the GRE.
4. A statement must be submitted to the program detailing the applicant's specific research interests and identifying the faculty member who is requested as supervisor of the dissertation research.
5. Favorable letters of recommendation from people familiar with the applicant's academic work and/or professional work.
6. Students may be considered for unconditional admission if further review of their transcripts, recommendation letters, correspondence or direct interactions with Environmental and Earth Sciences faculty, and statement of research interests indicates that they are qualified to enter the Doctoral Program.

Spatial Information Systems Certificate

Candidates should apply to the Graduate School as "special students." The GRE is not necessary. Those admitted into the Spatial Information Certificate program should be computer literate, with a B.S. or B.A. degree.

Petroleum Geoscience Certificate

Candidates should apply to the Graduate School as "special students." The GRE is not necessary. Students in the Petroleum Geoscience Certificate should have a baccalaureate degree in geoscience, or a degree in science, math or engineering with some experience in the petroleum industry.

Hazardous Materials and Waste Management Certificate

The terms of their admission allow participants to take the specific courses approved for the certificate program. They will not be allowed to take courses outside of the program. Under these rules, students are admitted as special students. All participants in the program must meet the 3.0/4.0 grade point average (GPA) requirement of the Graduate School, College and Environmental and Earth Sciences Program. They must maintain an overall GPA of 3.0 in coursework in order to receive the Certificate.

Certificate in Environmental Science

The terms of their admission allow participants to take the specific courses approved for the certificate program. They are not allowed to take courses outside of their program. Under these rules, students are admitted as non-degree or special students. All participants in the program must meet the 3.0/4.0 grade point average (GPA) requirement of the Graduate School, College and Environmental and Earth Sciences Program. They must maintain an overall GPA of 3.0 in their coursework in order to receive the Certificate.

Degree Requirements

Geology Masters Program

In the first year, a degree candidate must file a plan approved by the graduate studies committee, which includes coursework for the program including undergraduate course deficiencies if any. The graduate studies committee may allow graduate course credit for undergraduate courses with written approval. Graduate students are expected to attend the weekly seminar lectures during the semester.

For the M.S. thesis option, 24 semester hours of approved graduate level courses are required in addition to the thesis. A thesis proposal, written thesis and thesis defense are required. No more than 3 hours of research courses can be applied to the 24 semester hours.

For the M.S. non-thesis option, a minimum of 36 hours of approved graduate courses are required. A minimum of 3 and a maximum of 6 hours are to be taken in GEOL 5381, Research in Geology.

Environmental and Earth Sciences Master's Degree

All students take 15 semester hours of core courses as follows:

Engineering

CE 5321 Engineering for Environmental Scientists

and either

CE 5319 Physical-Chemical Processes II
or
CE 5328 Fundamentals of Air Pollution
Two of the following courses in science:
EVSE 5309 Environmental Sciences-Biological Aspects [1]
EVSE 5310 Environmental Sciences -Chemical Aspects [1]
EVSE 5311 Environmental Sciences -Geological Aspects [1]
[1] Students with less than 20 undergraduate hours in biology, chemistry, or geology will need to take a third environmental systems course as a deficiency. Students entering with a BS degree in one of these areas must take their two courses in the other areas.
One of the following three courses in City and Regional Planning
CIRP 5342 Environmental Policy
CIRP 5343 Foundations of Environmental Policy
CIRP 5351 Techniques of Environmental Assessment

Thesis Option: In addition to the core courses, the minimum requirements for the master's degree with thesis include:
9 hours of electives within one of the following departments: Biology, Chemistry, Earth and Environmental Sciences, Civil and Environmental Engineering, or School of Urban and Public Affairs
6 hours of additional electives
2 hours of EVSE seminar
6 hours thesis
The successful defense of the thesis before the supervising committee.

Non-thesis Option: In addition to the core courses the minimum requirements for the master's degree without thesis include:
9 hours of electives within one of the following departments: Biology, Chemistry, Earth and Environmental Sciences, Civil and Environmental Engineering, or School of Urban and Public Affairs
12 hours of additional electives [2]
2 hours of EVSE seminar
Successful completion of the Master's Comprehensive Examination in the final semester.
[2] Must include 6 hours in department(s) outside that in which the first 9 hours of additional coursework are taken.

Dual Degree Program

Dual master's degrees can be arranged with any suitable program. By participating in a dual degree program, students may apply 6-18 total semester credit hours jointly to meet the requirements of both degrees, thus reducing the total number of hours which would be required to earn both degrees separately. The number of hours which may be jointly applied ranges from six to 18, subject to the approval of Graduate Advisors from both programs. Degree plans, thesis or professional report proposals and programs of work must be approved by Graduate Advisors from both programs. The successful candidate will be awarded both degrees rather than one joint degree.

To participate in the dual degree program, students must make separate application to each program and must submit a separate program of work for each degree. Those interested in the dual degree program should consult the appropriate Graduate Advisors for further information on course requirements. See also the statement on Dual Degree Programs in the general information section of this catalog.

Arrangements to offer a dual degree have already been made between Environmental and Earth Sciences and the Program in City and Regional Planning (M.C.R.P. degree), School of Urban and Public Affairs.

Environmental and Earth Sciences BS-PhD Track

The B.S.-Ph.D. Track permits qualified students with a B.S. degree to pursue doctoral studies without completing a M.S. degree. The Doctoral Program provides students with the interdisciplinary knowledge and skills to conduct independent research in Environmental and Earth Sciences. Students conduct dissertation research under the supervision of a faculty member in one of the participating departments (Biology, Chemistry, Earth and Environmental Sciences, Civil Engineering, or School Urban and Public Affairs). The supervising professor and a faculty committee assign courses in this primary area of emphasis to support the student's research and professional goals. To provide interdisciplinary training, additional courses are assigned in a secondary area of emphasis.

Students in the B.S.-Ph.D. Track must complete 15 semester hours of core courses as described for the M.S. program in Environmental and Earth Sciences, unless waived from this requirement. The student's supervising committee must approve all additional courses taken to meet degree requirements. In the first year of residence, a Diagnostic Examination is conducted by the supervising committee to evaluate prior preparation and progress in the program. Successful completion of this examination by the end of the second semester of residence is required for continuation in the B.S.-Ph.D. Track.

Students may choose among any of the five participating units for their primary and secondary areas of emphasis. Course selection within these areas of emphasis must result in a cohesive program that supports the dissertation research.

Other requirements include:
1. Successful completion of the Diagnostic Examination at the end of the first year of residence.
2. Successful completion of the Comprehensive Examination, an oral defense of a research proposal to be pursued for the dissertation, and a specialization examination over areas of the student's proposed research.
3. Demonstration of proficiency in one foreign language or a research tool such as advanced computer skills, statistics, or operations research.
4. Successful defense of the dissertation and acceptance of the dissertation by the supervising committee.

With the approval of the Graduate Studies Committee, students in the B.S.-Ph.D. Track who do not complete doctoral degree requirements may be awarded the M.S. degree if they complete the requirements for the degree.

Environmental and Earth Sciences Doctoral Degree

The Doctoral Program provides students with the interdisciplinary knowledge and skills to conduct independent research in Environmental and Earth Sciences. Students conduct dissertation research under the supervision of a faculty member in one of the participating departments (Biology, Chemistry, Earth and Environmental Sciences, Civil and Environmental Engineering, or Urban and Public Affairs). The supervising professor and a faculty committee assign courses in this primary area of emphasis to support the student's research and professional goals. To provide interdisciplinary training, additional courses are assigned in a secondary area of emphasis.

Students enter the Doctoral Program with a Master's degree in a science or engineering field, or with 30 semester hours of graduate

coursework. In the first year of residence, a Diagnostic Examination is conducted to evaluate this previous work. If they have not already done so in their previous work, all Doctoral students must take two engineering courses; two or three science courses (two if their prior training is in science, three if in engineering or another non-science field); and one course in policy or planning. The student's supervising committee must approve all courses taken to meet these requirements.

Students may choose among any of the five participating units for their primary and secondary areas of emphasis. Course selection within these areas of emphasis must result in a cohesive program that supports the dissertation research.

Other requirements include:

1. Successful completion of the Diagnostic Examination at the end of the first year of residence.
2. Successful completion of the Comprehensive Examination, an oral defense of a research proposal to be pursued for the dissertation, and a specialization examination over areas of the student's proposed research.
3. Demonstration of proficiency in one foreign language or a research tool such as advanced computer skills, statistics, or operations research.
4. Successful defense of the dissertation and acceptance of the dissertation by the supervising committee.

Certificate Program Requirements

Spatial Information Systems Certificate

The following five graduate courses (15 credit hours) are required. Courses may be transferred from other universities following Graduate School policies. The Spatial Information Systems certificate will be awarded to any student completing the five courses (15 credit hours) in the program with a composite GPA of 3.0 or higher.

Geol. 5320 (Understanding GIS) introduces the concepts of Geographical Information Systems and provides students with hands-on experience using ArcView 8.x in the ArcGIS Desktop application.

Geol. 5321 (Analysis of Spatial Data) uses the entire ArcGIS suite of tools, and covers spatial data management, analysis and visualization including topological data structures, vector- and surface-analysis tools, and spatial statistics including krieging and data quality evaluation.

Geol. 5322 (Global Positioning Systems) includes the fundamentals of geographic coordinate systems, map projections, the GPS satellite constellation, signal characteristics and processing, data analysis, and the incorporation of this data into GIS software. The accuracy and precision of the various types of GPS receivers will be compared in a series of field exercises.

Geol. 5323 (Remote Sensing Fundamentals) addresses image acquisition, processing and interpretation, with applications to such diverse fields as urban and environmental studies, natural resources exploration and management, agriculture, meteorology, and land use classification and monitoring. Satellite images with very high spatial and spectral resolution are now available to the public; these new data sources will be reviewed and analyzed. Image data availability over the Internet will be examined.

Geol. 5324 (Geographic Data Analysis Project) is an independent study course. After completing 12 hours of course work, students will design and carry out an advisor-approved project using spatial data.

Petroleum Geoscience Certificate

Any student that later seeks an MS degree in Geology may apply up to 15 hours of coursework in this certificate program toward that degree, if done within 6 years of completion of the certificate by petitioning the Graduate School through the College of Science.

The following 5 courses (15 credit hours) are required for the certificate, which is awarded to those completing the program with a B average (3.0 GPA).

Geol. 5370 (Sedimentary Systems), carbonate and clastic depositional systems, recognition of facies, systems tracts, diagenetic overprint, shelf to basin profiling, and sequence stratigraphic analysis

Geol. 5371 (Petroleum Geochemistry and Basin Modeling), Basic concepts of petroleum geochemistry, interpretation of geochemical data, maturation of kerogen. Basin evolution processes controlling petroleum generation and accumulation, subsidence histories, porosity evolution, overpressure generation, thermal histories, hydrocarbon expulsion and migration

Geol. 5372 (Structural Geometry and Tectonics of Petroleum Fields and introduction to well log interpretation), Techniques of structural modeling and restoration and the reliability of structural interpretation; structural styles of thin skinned, basement involved, strike-slip and reactivated systems. Introduction to the various types of well logs, and the quantitative and qualitative information obtained

Geol. 5373 (Reservoir Characterization), Field Development, Risk Assessment and Economic Evaluation of Prospects

Geol. 5374 (Seismic Interpretation), Introduction to the methods of acquisition and processing as they relate to the interpretation of seismic records. Structural and stratigraphic interpretation methods and pitfalls using two and three dimensional seismic data.

Hazardous Materials and Waste Management Certificate

Any student that later seeks a graduate degree in the Environmental and Earth Sciences MS program may apply 12 of their 15 hours of coursework in this certificate program toward the Environmental and Earth Sciences MS degree program if done within 6 years of completion of the certificate by petitioning the Graduate School through the College of Science.

The Certificate in Hazardous Materials requires that students take and successfully complete 15 advanced hours in Civil and Environmental Engineering, Environmental and Earth Sciences, City and Regional Planning and related courses with a minimum GPA of 3.0.

Before being awarded the certificate, students must also present evidence of having completed Hazardous Waste Operations and Emergency Response (HAZWOPER) or approved equivalent training that meets OSHA/EPA training requirements for workers performing hazardous waste site functions in accord with the provisions in 29 CFR 1910.120 of the Superfund Amendments and Reauthorization Act for workers at uncontrolled hazardous waste sites. This training is offered at The University of Texas at Arlington , Southwest Environmental Education Training Center as a formal or Web-based course.

Required Courses:

CE 5329 Environmental Risk Based Corrective Action
CE 6323 Hazardous Waste Management
CIRP 5341 Environmental Regulations
or CIRP 5353 Environ mental Law

Electives (Two courses chosen from the following list of courses):
CIRP 5342 Environmental Policy
CIRP 5350 Environmental Planning
CIRP 5351 Environmental Assessment
CIRP 5356 Geographic Information Systems
EVSE 5320 Toxicology
EVSE 5321 Environmental Health
GEOL 5301 Environmental Geochemistry and Geology
GEOL 5303 Understanding Geographic Information Systems

Students may choose appropriate graduate courses other than those listed above with the approval of the Environmental and Earth Sciences Graduate Studies Committee. The above courses have been selected because their subject matters directly relate to the knowledge base required of professionals engaged in Hazardous Materials and Waste Management. Students should choose elective courses that best meet their career goals in Hazardous Materials and Waste Management. Students should consult with the Chair of the Graduate Studies Committee in Environmental and Earth Sciences in developing the most appropriate set of courses for their professional interests. Full course descriptions for the above listed classes are found in the University of Texas at Arlington's Graduate Catalog.

Certificate in Environmental Science

Any student that later seeks a graduate degree in the Environmental and Earth Sciences MS program may apply 12 of their 15 hours of coursework toward that program if done within 6 years of completion of the certificate by petitioning the Graduate School through the College of Science.

The Certificate in Environmental Science requires that students take and successfully complete 15 advanced hours in Environmental Science and related courses with a minimum GPA of 3.0.

The advanced courses available to participants in the certificate program include:
EVSE 5309 Environmental Systems-Biological Aspects [3]
EVSE 5310 Environmental Systems-Chemical Aspects [3]
EVSE 5311 Environmental Systems-Geological Aspects [3]
EVSE 5320 Toxicology
EVSE 5300 Environmental Health
BIOL 5345 Limnology
BIOL 5350 Conservation Biology
BIOL 5355 Aquatic Biology
BIOL 5326 Wetlands Ecology
BIOL 5325 Plant Ecology
CE 5321 Engineering for Environmental Scientists
CIRP 5341 Environmental Regulations, Law and Planning
CIRP 5350 Environmental Planning
GEOL 5301 Environmental Geochemistry
GEOL 5303 Understanding Geographic Information Systems
GEOL 5407 Environmental Geophysics

[3] At least two of these environmental courses are required and both should be in areas outside of the student's undergraduate major (e.g., A student with an undergraduate major in the Biological Sciences would be required to take EVSE 5310 and 5311).

Students may choose appropriate graduate courses other than those listed above with the approval of the Chair of the Environmental and Earth Sciences Graduate Studies Committee. The above courses have been selected because their subject matters directly relate to the knowledge base required of professionals engaged in Environmental Science. Students should choose to take those courses that best meet their career goals in Environmental Science. Students should consult with the Chair of the Graduate Studies Committee in Environmental and Earth Sciences in developing the most appropriate set of courses for their professional interests. Full course descriptions for the above listed classes are found in The University of Texas at Arlington's Graduate Catalog.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Geology (GEOL)

5181. RESEARCH IN GEOLOGY (1-0). Independent study in various areas of research including paleontology, stratigraphy, tectonics, structural geology, sedimentology, geochemistry, petrology, geophysics, and volcanology. May be repeated for credit. Graded R.

5190. GEOSCIENCE INTERNSHIP (1-0). Work in geoscience for a commercial concern at least 20 hrs/wk for 3 months. Requirements include writing a resume, learning how to interview and function on the job, and a report describing the work. Prerequisite: graduate admission to geology.

5199. TECHNICAL SESSIONS (1-0). Forum for presentation of results of graduate students and faculty research. Required each semester of all graduate students.

5265. TOPICS IN GEOLOGY (1-2).

5281. RESEARCH IN GEOLOGY (2-0). Independent study in various areas of research including paleontology, stratigraphy, tectonics, structural geology, sedimentology, geochemistry, petrology, geophysics, and volcanology. May be repeated for credit. Graded R.

5301. ENVIRONMENTAL GEOCHEMISTRY (3-0). Fundamentals of low-temperature aqueous geochemistry, and anthropogenic impacts on natural water systems. Topics include equilibrium thermodynamics, kinetics, aqueous complexation, and oxidation/reduction processes that affect metals and organic matter in natural waters.

5302. GLOBAL TECTONICS (3-0). Plate tectonic theory and evidence, review of plate tectonic history since the late Precambrian. Prerequisite: GEOL 3442, GEOL 3443.

5304. GEOMETRY AND MECHANICS OF GEOLOGICAL STRUCTURES (3-0). Geometries of structures associated with extensional, shortening, strike-slip, diapiric, and reactivated tectonic envi-

ronments. Principles of mechanics applied to the formation of these structures. Prerequisite: GEOL 3443; MATH 2325; PHYS 1444.

5306. ENVIRONMENTAL GEOLOGY (3-0). Hydrological systems, water quality, and behavior of pollutants; atmospheric systems, air quality, and effects of pollutants; occurrence, prediction, and amelioration of natural environmental hazards including floods, earthquakes, volcanism, and landslides.

5308. PALEOCLIMATE AND CLIMATE CHANGE (3-0). Climate change throughout geologic time, especially the last 100 million years: models of the climate system, reconstruction and modeling of past climates, abrupt climate change, warm climates, paleoclimatology, climate change and mass extinctions.

5309. GEOMORPHOLOGY AND QUATERNARY STRATIGRAPHY OF SEDIMENTARY SYSTEMS (3-0). This course examines those physical processes that sculpt the surface of the Earth and result in deposition of sediments. Surface systems covered include weathering, mass wasting, rivers, shorelines, eolian processes, and glaciers. The course also examines the stratigraphic techniques used to decode the recent (2 million to present) stratigraphic record of these systems. Course is designed for geologists, biologists, and other fields concerned with interpreting and/or managing modern environments.

5310. OCEANOGRAPHY (3-0). The many aspects of oceanography with special emphasis on physical oceanography and marine geology.

5312. SANDSTONE PETROLOGY (3-0). Petrographic examination of terrigenous clastics, including textural, compositional, and diagenetic aspects. Focus on paleogeographic, tectonic, and environmental interpretation. Prerequisite: GEOL 3442.

5313. CARBONATE PETROLOGY (3-2). Nature and composition of carbonate sediments and rocks in terms of their genesis, depositional environments, and processes involved in transport, deposition, diagenesis, and lithification. Prerequisite: GEOL 4443 or equivalent and 4345 or concurrent enrollment.

5320. UNDERSTANDING GEOGRAPHIC INFORMATION SYSTEMS (2-1). A practical introduction to GIS and methods of creating, maintaining and displaying spatial data using the ArcGIS software. Prerequisite: consent of instructor.

5321. ANALYSIS OF SPATIAL DATA (2-1). Analyzing spatial data using ArcGIS, Spatial Analyst, and 3D Analyst, topological surface analysis and modeling; 3D visualization and viewscapes; spatial statistics and data quality management. Prerequisite: GEOL 4330, GEOL 5320, or permission of the instructor.

5322. GLOBAL POSITIONING SYSTEM (2-1). Review of the NAVSTAR Global Positioning System and its segments: space, operational control, and GPS receivers. Mechanics of the satellite constellation; GPS signal structure; data and coordinate systems; precision and accuracy; error factors; absolute (point) versus relative (differential) positioning. Various positioning techniques using several types of GPS receivers; field data collection and input into GIS programs for data analysis and presentation. Prerequisite: GEOL 4330, GEOL 5320, or permission of the instructor.

5323. REMOTE SENSING FUNDAMENTALS (2-1). The electromagnetic spectrum and the interaction of EM waves with matter; various types of sensing devices; spectral and spatial resolution parameters; airborne and satellite sensor platforms; aerial photographs and false-color images. The sequence of data acquisition, computer processing and interpretation; sources of data; the integration of remote sensing data with other data types in GIS. Prerequisite: GEOL 4330, GEOL 5320, or permission of the instructor.

5324. GEOGRAPHIC DATA ANALYSIS PROJECT (3-0). Acquisition, processing and analysis of a set of spatial data selected by the student with the approval of an advisor. A written report of the results is required. Prerequisite: GEOL 5320, 5321, 5322, 5323.

5333. FIELD METHODS (3-0).

5342. MICROFOSSILS AND THE CORRELATION OF SEDIMENTARY ROCKS (2-3). This course is an introduction to microfossil groups useful in the regional and global correlation of sedimentary rock strata throughout the Phanerozoic. Microfossils record plant, animal, and protist life forms including foraminifers, radiolarians, ostracodes, conodonts, algae, and coccolithophorids. Morphology, taxonomy, and biostratigraphy of these groups will be stressed along with the principles used in the correlation of sedimentary rocks. Prerequisite: GEOL 3441, GEOL 3442, AND GEOL 4391.

5344. DEPOSITIONAL ENVIRONMENTS: TERRIGENOUS CLASTICS (3-0). Depositional processes, physiographic and environmental components, and facies characteristics and relationships of alluvial, eolian, deltaic, clastic shoreline, shallow siliciclastic sea and deep sea clastic depositional systems. Emphasis on interpretation of ancient analogs. Prerequisite: GEOL 4443 or equivalent.

5345. PETROLEUM GEOLOGY (2-3). Origin, generation and migration of petroleum; reservoirs, seals and traps; the subsurface environment; properties of petroleum; exploration and production methods; use of seismic lines and well logs; types of petroleum basins; reserves and resources.

5348. MARINE GEOLOGY (3-0). Geologic processes of the oceans. Sedimentation in the oceans including biologic processes that relate to sediment production, chemistry of seawater, geochemical cycles in the oceans. Origin of seafloor topography. Seafloor spreading.

5365. TOPICS IN GEOLOGY (2-3). Topics offered depend on student and faculty interest. Such topics might include identification of fossil fragments in thin section; magmatic processes; plate tectonics and sedimentary basin evolution; stratigraphic paleontology; sedimentary or volcanogenic ore deposition; geostatistics; geophysical archeology; and various advanced subjects in sedimentology, stratigraphy, paleontology, geophysics, geochemistry, volcanology and petrology. May be repeated for credit when topic changes.

5369. SEQUENCE STRATIGRAPHY (3-0). This course introduces sequence stratigraphy within context of all stratigraphy and history of sequence stratigraphy. Includes overview of sequence stratigraphy principles. Review of basic fundamental concepts of surface- and facies-based physical stratigraphy. Review of architectural element analysis, sequence stratigraphic in seismic, borehole expression of sequences and overview of subsurface stratigraphic techniques.

5370. SEDIMENTARY SYSTEMS (3-0). Carbonate and clastic depositional systems, recognition of facies, systems tracts, diagenetic overprint, shelf to basin profiling, and sequence stratigraphic analysis.

5371. PETROLEUM GEOCHEMISTRY AND BASIN MODELING (3-0). Basic concepts of petroleum geochemistry, interpretation of geochemical data, maturation of kerogen. Basin evolution processes controlling petroleum generation and accumulation, subsidence histories, porosity evolution overpressure generation, thermal histories, hydrocarbon expulsion and migration.

5372. STRUCTURAL GEOMETRY AND TECTONICS OF PETROLEUM FIELDS AND INTRODUCTION TO WELL LOG INTERPRETATION (3-0). Techniques of structural modeling and restoration to the reliability of structural interpretation; structural styles of thin skinned, basement involved, strike-slip and reactivated systems. Introduction to the various types of well logs, and the quantitative and qualitative information obtained.

5373. RESERVOIR CHARACTERIZATION (3-0). Reservoir characterization, field development, risk assessment and economic evaluation of prospects.

5374. SEISMIC INTERPRETATION (3-0). Introduction to the methods of acquisition and processing as they relate to the interpretation of seismic records. Structural and stratigraphic interpretation methods and pitfalls using two and three dimensional seismic data.
5381. RESEARCH IN GEOLOGY (3-0). Independent study in various areas of research including paleontology, stratigraphy, tectonics, structural geology, sedimentology, geochemistry, petrology, geophysics, and volcanology. May be repeated for credit. Graded R.
5398. THESIS (3-0). Graded F, R.
5405. METEOROLOGY AND CLIMATOLOGY (3-3). A quantitative approach to the study of the structure, energy, and motions of the atmosphere.
5409. APPLIED GEOPHYSICS (3-3). Geophysical Techniques used to determine the presence and extent of deposits of minerals and the subsurface structure of selected localities from field methods.
5483. GEOLOGICAL ARCHAEOLOGY (3-1). Geological, geochemical and geophysical techniques employed in the study of archaeological sites and materials. Also listed as ANTH 5483.
5698. THESIS (6-0).
Graded F, P, R.

Environmental and Earth Sciences (EVSE)

5100. SELECTED TOPICS IN ENVIRONMENTAL SCIENCE AND ENGINEERING (1-0). May be repeated for credit when topic changes.
5200. SELECTED TOPICS IN ENVIRONMENTAL AND EARTH SCIENCES (2-0). May be repeated for credit when topic changes.
5294. INDIVIDUAL PROBLEMS IN ENVIRONMENTAL AND EARTH SCIENCES (2-0). Individual research projects supervised by a faculty member.
5300. SELECTED TOPICS IN ENVIRONMENTAL AND EARTH SCIENCE (3-0). May be repeated for credit when topic changes.
5309. ENVIRONMENTAL SYSTEMS-BIOLOGICAL ASPECTS (3-0). An introduction to the biological components of environmental systems. Population dynamics, species interactions, community structure, biodiversity, bioenergetics, nutrient cycling and human impacts are reviewed. Focus will be on natural processes and their engineering applications.
5310. ENVIRONMENTAL SYSTEMS-CHEMICAL ASPECTS (3-0). An introduction to the chemistries of air at different altitudes, of water systems and of soils. Chemical and physico-chemical processes at phase boundaries, modeling for kinetics and mass transport, analytical techniques and disposal and recycling are included as well as their impact on engineering decisions.
5311. ENVIRONMENTAL SYSTEMS-GEOLOGICAL ASPECTS (3-0). Introduction to the tectonic, volcanic, atmospheric, climatic, hydrologic and geochemical processes and natural hazards of the earth, and their interaction with political, economic and engineering decisions.
5320. TOXICOLOGY (3-0). An introduction to the general principles of toxicology with an emphasis on certain classes of toxic agents, their sources and toxic effects, as well as their environmental fate. Prerequisite: CHEM 2322.
5321. ENVIRONMENTAL HEALTH (3-0). An introduction to health considerations relevant to environmental projects. Prepares students to take the Registered Environmental Health Specialist examination.
5322. ENVIRONMENTAL RISK ASSESSMENT (3-0). An introduction to the health assessment process, presenting methodologies and guidelines for conducting health assessments.
5394. INDIVIDUAL PROBLEMS IN ENVIRONMENTAL & EARTH SCIENCES (3-0). Individual research projects supervised by a faculty member. Prerequisite: consent of instructor.
5395. MASTER'S PROJECT (3-0). May be used as elective for students in non-thesis program. Graded F, P.
5398. THESIS (3-0). Graded F, R.
5698. THESIS (6-0). Graded F, P, R.
5998. THESIS (9-0). Graded F, P, R.
6100. SEMINAR IN ENVIRONMENTAL AND EARTH SCIENCES (1-0). Topics presented by faculty, students, and invited lecturers.
6197. RESEARCH IN ENVIRONMENTAL AND EARTH SCIENCES (1-0). Individually approved research projects. May be repeated for credit. Graded F, P, R.
6297. RESEARCH IN ENVIRONMENTAL AND EARTH SCIENCES (2-0). Individually approved research projects. May be repeated for credit. Graded F, P, R.
6397. RESEARCH IN ENVIRONMENTAL AND EARTH SCIENCES (3-0). Individually approved research projects. May be repeated for credit. Graded F, P, R.
6399. DISSERTATION (3-0). Graded F, R.
6697. RESEARCH IN ENVIRONMENTAL AND EARTH SCIENCE (6-0). Individually approved research projects. May be repeated for credit. Graded F, P, R.
6699. DISSERTATION (6-0). Graded F, R.
6997. RESEARCH IN ENVIRONMENTAL AND EARTH SCIENCE (9-0). Individually approved research projects. May be repeated for credit. Graded F, P, R.
6999. DISSERTATION (9-0). Graded F, P, R.

Other Courses

The following departmental courses are available in addition to others as approved by the Committee on Graduate Studies for Environmental and Earth Sciences. Full course descriptions are available elsewhere in the Graduate and Undergraduate catalogs. Up to nine hours of 3000- and 4000-level undergraduate courses can be applied toward formal coursework requirements in the Master's and Ph.D. degree programs, with approval of the student's supervising committee.

Biology (BIOL)

BIOL 5306. BIOENERGETICS (3-0).
BIOL 5314. BIOMETRY (3-0).
BIOL 5315. COMMUNITY ECOLOGY (3-0).
BIOL 5321. QUANTITATIVE ECOLOGICAL ANALYSIS.
BIOL 5328. LANDSCAPE ECOLOGY.
BIOL 5325. PLANT ECOLOGY.
BIOL 5326. WETLANDS ECOLOGY.
BIOL 5333. BIOLOGICAL MODELING (3-0).
BIOL 5339. ENVIRONMENTAL PHYSIOLOGY (3-0).
BIOL 5348. ENVIRONMENTAL BIOLOGY (2-3).
BIOL 5350. CONSERVATION BIOLOGY (3-0).
BIOL 5351. ENVIRONMENTAL MICROBIOLOGY (3-0).
BIOL 5354. LIMNOLOGY (3-0).
BIOL 5320. BIOGEOGRAPHY (3-0).
BIOL 5342. ICHTHYOLOGY (2-3).
BIOL 5345. ORNITHOLOGY (2-3).
BIOL 5355. AQUATIC BIOLOGY (2-3).
BIOL 5361. ADVANCED BIOMETRY (3-0).
BIOL 5362. EXPERIMENTAL DESIGN (3-0).

BIOL 3310. BIOLOGY OF TEXAS (3-0).
BIOL 3341. ENTOMOLOGY (2-3).
BIOL 3455. INVERTEBRATE ZOOLOGY (3-4).
BIOL 3457. GENERAL ECOLOGY (3-3).
BIOL 4444. VERTEBRATE NATURAL HISTORY (3-3).

Chemistry (CHEM)

CHEM 5300. SELECTED TOPICS IN ADVANCED CHEMISTRY (3-0).
CHEM 5308. DETERMINATION OF MOLECULAR STRUCTURE BY PHYSICAL METHODS (3-0).
CHEM 5309. ORGANIC CHEMISTRY I (3-0).
CHEM 5310. ORGANIC CHEMISTRY II (3-0).
CHEM 5311. ANALYTICAL CHEMISTRY (3-0).
CHEM 5315. INORGANIC CHEMISTRY (3-0).
CHEM 5319. GENERAL BIOCHEMISTRY I (3-0).
CHEM 5320. GENERAL BIOCHEMISTRY II (3-0).
CHEM 5321. METABOLISM AND REGULATION (3-0).
CHEM 5325. ENZYMOLOGY (3-0).
CHEM 5350. ADVANCED POLYMER CHEMISTRY (3-0).
CHEM 5461. ANALYTICAL INSTRUMENTATION (2-8).
CHEM 6201. UNIT OPERATIONS (2-0).
CHEM 6202. PRINCIPLES OF INDUSTRIAL CHEMISTRY (3-0).
CHEM 6203. REGULATORY ASPECTS OF THE CHEMICAL INDUSTRY (2-0).

Civil Engineering (CE)

CE 5318. PHYSICAL-CHEMICAL PROCESSES I (3-0).
CE 5319. PHYSICAL-CHEMICAL PROCESSES II (3-0).
CE 5320. SOLID WASTE MANAGEMENT (3-0).
CE 5321. ENGINEERING FOR ENVIRONMENTAL SCIENTISTS (3-0).
CE 5322. AIR POLLUTION METEOROLOGY AND CHEMISTRY (3-0).
CE 5323. AIR POLLUTION DISPERSION MODELING (3-0).
CE 5324. TRANSPORTATION AND AIR QUALITY (3-0).
CE 5325. BIOLOGICAL PROCESSES (3-0).
CE 5327. AIR POLLUTION CONTROL ENGINEERING (3-0).
CE 5328. FUNDAMENTALS OF AIR POLLUTION (3-0).
CE 5329. ENVIRONMENTAL RISK BASED CORRECTIVE ACTION (3-0).
CE 5347. SURFACE WATER HYDROLOGY (3-0).
CE 5348. GROUND WATER HYDROLOGY (3-0).
CE 6323. HAZARDOUS WASTE MANAGEMENT (3-0).
CE 6314. STORM WATER MODELING (3-0).
CE 6326. INDUSTRIAL AND HAZARDOUS WASTE (3-0).
CE 6328. MODELING OF NATURAL WATER SYSTEMS (3-0).
CE 6329. ADVANCED ENVIRONMENTAL ENGINEERING CONTROL PROCESSES (3-0).

City and Regional Planning (CIRP)

CIRP 5304. PLAN IMPLEMENTATION AND LEGAL CONTROLS (Zoning, Subdivision Ordinances, Capital Budgets) (3-0).
CIRP 5305. LAND USE, MANAGEMENT AND DEVELOPMENT (3-0).
CIRP 5311. ELEMENTS OF URBAN DESIGN (3-0).
CIRP 5313. URBAN GROWTH POLICIES (3-0).
CIRP 5340. LAND SUITABILITY ANALYSIS (3-0).
CIRP 5341. ENVIRONMENTAL REGULATIONS: LAWS AND PLANNING (3-0).
CIRP 5342. URBAN ENVIRONMENTAL POLICY (3-0).
CIRP 5343 FOUNDATIONS OF ENVIRONMENTAL POLICY (3-0)
CIRP 5350. ENVIRONMENTAL PLANNING (3-0).
CIRP 5351. TECHNIQUES OF ENVIRONMENTAL ASSESSMENT (3-0).
CIRP 5356. GEOGRAPHIC INFORMATION SYSTEMS (3-0).
CIRP 5357. INTERMEDIATE GEOGRAPHIC INFORMATION SYSTEMS (3-0).
CIRP 5395. ENVIRONMENTAL LAW (3-0).

Earth and Environmental Sciences (GEOL)

GEOL 5301. ENVIRONMENTAL GEOCHEMISTRY AND GEOLOGY (3-0).
GEOL 5303. UNDERSTANDING GEOGRAPHIC INFORMATION SYSTEMS (GIS) (2-3).
GEOL 5306. ENVIRONMENTAL GEOLOGY (3-0).
GEOL 5308. NATURAL ENVIRONMENTAL HAZARDS (3-0).
GEOL 5325. PALEOCLIMATOLOGY AND PALEOCEANOGRAPHY (3-0).
GEOL 5348. MARINE GEOLOGY (3-0).

Psychology (PSYC)

PSYC 5347. ENVIRONMENTAL PSYCHOLOGY (3-0).

Urban and Public Affairs (URPA)

URPA 5300. THE URBAN COMMUNITY (3-0).
URPA 5301. FOUNDATIONS OF URBAN POLITICS AND ECONOMICS (3-0).

Department of Mathematics

www.uta.edu/math/

Areas of Study and Degrees
Mathematics
M.S., M.A., Ph.D.

Master's Degree Plans
Thesis and Thesis Substitute

Chair
Jianping Zhu
469 Pickard Hall
817.272.3246

Graduate Advisor
Jianzhong Su
464 Pickard Hall
817.272.5684

Graduate Faculty
Professors
Aktosun, Chen-Charpentier, Dyer, Han, Li, Liao, C. Liu, Nestell, Su, Sun-Mitchell, Zhu

Associate Professors
Cordero, Epperson, Gornet, Hawkins, Heath, D. Jorgensen, Kojouharov, Korzeniowski, Kribs-Zaleta, D. Liu, Shipman, Vancliff

Assistant Professors
Ambartsoumian, Grantcharov, Pankavich, Shan, T. Jorgensen

Professors Emeritus
Corduneanu, Dragan, Greenspan, Moore

Objective

The objectives of the Mathematics Department's program at the master's level are (1) to develop the student's ability to do independent research and prepare for more advanced study in mathematics, and (2) to give advanced training to professional mathematicians, mathematics teachers, and those employed in engineering, scientific, and business areas.

Graduate work will be offered in algebra, complex and real variables, differential equations, functional analysis, geometry, mathematics education, numerical analysis, operations research, probability, statistics and topology.

Admissions Requirements

Master of Science Program

For unconditional admission, a student must meet the following requirements:

1. A B.A. or B.S. degree in mathematics or closely related field.
2. An overall GPA in the final 60 hours of coursework of a 3.0 or better, as calculated by the Graduate School, on a 4.0 scale.
3. Minimum of 350 on the verbal and 650 on the quantitative portions of the Graduate Record Examination (GRE).
4. For applicants whose native language is not English, a minimum score of 550 on the Test of English as a Foreign Language (or a minimum score of 213 on a computer-based test, or a minimum score of 79 on an internet-based test) or a minimum score of 40 on the Test of Spoken English.
5. Three favorable letters of recommendation from people familiar with the applicant's academic work.

Applicants who do not satisfy requirements 2 or 3 above may be considered for unconditional admission if further review of their undergraduate transcript, recommendation letters, correspondence or direct interactions with mathematics faculty, and statement of professional or research interests indicates that they are qualified to enter the Master's Program without deficiency.

If an applicant does not meet a majority of standards for unconditional admission outlined above, they may be considered for probationary admission after careful examination of their application materials. Probationary admission requires that the applicant receive a B or better in the first 12 hours of graduate coursework at UT Arlington.

Students who are unconditionally admitted or admitted on probation will be eligible for available scholarship and/or fellowship support. Award of scholarships or fellowships will be based on consideration of the same criteria utilized in admission decisions. To be eligible, candidates must be new students coming to UT Arlington in the fall semester, must have a GPA of 3.0 in the last 60 undergraduate credit hours plus any graduate credit hours as calculated by the Graduate School, and must be enrolled in a minimum of 6 hours of coursework in both long semesters to retain the fellowship.

Applicants may be denied admission if they have less than satisfactory performance on a majority of the admission criteria described above.

A deferred decision may be granted when a file is incomplete or when a denied decision is not appropriate. An applicant unable to supply all required documentation prior to the admission deadline, but who otherwise appears to meet admission requirements, may be granted provisional admission.

Master of Arts Program

For unconditional admission a student must meet items 1-3 or 3-5.

1. A B.S. or B.A. degree with at least 18 hours of mathematics coursework with a GPA of at least 3.0, as calculated by the Graduate School on a 4.0 scale.
2. Minimum of 400 on the verbal and 600 on the quantitative portions of the Graduate Record Examination (GRE).
3. Three favorable letters of recommendation from people familiar with the applicant's academic work and/or professional work.
4. A B.S. or B.A. degree.
5. Certified to teach mathematics at the Secondary Level (Secondary Mathematics Certification).

Applicants who do not satisfy requirements 1 or 2 above may be considered for unconditional admission if further review of their undergraduate transcript, recommendation letters, correspondence or direct interactions with mathematics faculty, and statement of professional or research interests indicates that they are qualified to enter the Master's Program without deficiency.

If an applicant does not meet a majority of standards for unconditional admission outlined above, they may be considered for probationary admission after careful examination of their application materials. Probationary admission requires that the applicant receive a B or better in the first 12 hours of graduate coursework at UT Arlington.

Applicants may be denied admission if they have less than satisfactory performance on a majority of the admission criteria described above.

A deferred decision may be granted when a file is incomplete or when a denied decision is not appropriate. An applicant unable to supply all required documentation prior to the admission deadline, but who otherwise appears to meet admission requirements, may be granted provisional admission.

Doctoral Program

For unconditional admission a student must meet the following requirements:

1. A master's degree or at least 30 hours of graduate coursework in mathematics or closely related fields.
2. A minimum GPA of 3.0, as calculated by the Graduate School, on a 4.0 scale in graduate coursework.
3. Minimum of 350 on the verbal and 700 on the quantitative portions of the Graduate Record Examination (GRE).
4. For applicants whose native language is not English, a minimum score of 550 on the Test of English as a Foreign Language (or a minimum score of 213 on a computer-based test, or a minimum score of 79 on an internet-based test) or a minimum score of 40 on the Test of Spoken English.
5. Three favorable letters of recommendation from people familiar with the applicant's academic work and/or professional work.

Applicants who do not satisfy requirements 2 or 3 above may be considered for unconditional admission if further review of their undergraduate transcript, recommendation letters, correspondence or direct interactions with mathematics faculty, and statement of professional or research interests indicates that they are qualified to enter the Doctoral Program without deficiency.

If an applicant does not meet a majority of standards for unconditional admission outlined above, they may be considered for probationary admission after careful examination of their application materials. Probationary admission requires that the applicant receive a B or better in the first 12 hours of graduate coursework at UT Arlington.

Applicants may be denied admission if they have less than satisfactory performance on a majority of the admission criteria described above.

A deferred decision may be granted when a file is incomplete or when a denied decision is not appropriate. An applicant unable to supply all required documentation prior to the admission deadline, but who otherwise appears to meet admission requirements, may be granted provisional admission.

Doctoral Program (B.S.-Ph.D. track)

For unconditional admission a student must meet the following requirements:

1. A bachelor's degree in mathematics or in a closely related field.
2. A minimum GPA of 3.00 on the 4.00 scale in undergraduate coursework, as calculated by the UT Arlington Graduate School.
3. A minimum of 350 on the verbal part and 700 on the quantitative part of the Graduate Record Examination (GRE).
4. For an applicant whose native language is not English, a minimum score of 550 on the Test of English as a Foreign Language (or a minimum score of 213 on a computer-based test, or a minimum score of 79 on an internet-based test) or a minimum score of 40 on the Test of Spoken English.
5. At least three letters of recommendation from people familiar with the applicant's academic work and/or professional work.

Applicants who do not satisfy requirement 2 or/and 3 above may be considered for an unconditional admission if a further review of their undergraduate transcript(s), recommendation letters, correspondence or direct interactions with mathematics faculty, and statement of professional or research interests indicates that they are qualified to enter the B.S.-Ph.D. track program without deficiency.

If an applicant does not meet a majority of standards for an unconditional admission outlined above, he/she may be considered for a probationary admission after a careful examination of his/her application materials. A probationary admission requires that the applicant receive grades of B or better in the first 12 hours of graduate course work at UT Arlington.

An applicant may be denied admission if they have less than satisfactory performance on a majority of the admission criteria described above.

A deferred decision may be granted when the applicant's file is incomplete or when a denial on his/her admission is not appropriate. An applicant who is unable to supply all required documentation prior to the admission deadline but who otherwise appears to have met admission requirements may be granted provisional admission.

Students who are unconditionally admitted or admitted on probation will be eligible for available scholarship and/or fellowship support. Award of scholarships or fellowships will be based on consideration of the same criteria utilized in admission decisions. To be eligible, candidates must be new students coming to UT Arlington in the fall semester, must have a GPA of 3.0 in the last 60 undergraduate credit hours plus any graduate credit hours as calculated by the Graduate School, and must be enrolled in a minimum of 6 hours of coursework in both long semesters to retain the fellowship.

Master of Science Degree Requirements

The Department of Mathematics offers master's degree programs in mathematics with additional emphasis in applied mathematics, computer science, mathematics education, pure mathematics, and statistics. All students are to use either the thesis or thesis-substitute plan.

All students in Master of Science program must complete one of the following:

1. General Mathematics core requirements:
   MATH 5300: Computer Programming and Applications
   MATH 5307: Mathematical Analysis I
   MATH 5308: Mathematical Analysis II
   MATH 5333: Linear Algebra and Matrices
   One of the following tracks:
   Applied Mathematics: MATH 5350, 5351, and either 5320 or 5321
   Computer Science: MATH (5348 and 5349) or (5338 and 5339), and either 5371 or 5373, and six approved hours in computer science engineering
   Mathematics Education: Nine hours from MATH 5336, 5337, 5340-5348, 5352
   Pure Mathematics: MATH 5331 (replaces MATH 5300), either 5317 or 5322, either 5332 or 5334, and either 5304 or 5326
   Core requirements can also be fulfilled by completing core requirements in the B.S.-Ph.D. track in the Doctoral program.
2. General Statistics core requirements:
   MATH 5300: Computer Programming and Applications
   MATH 5307: Mathematical Analysis I
   MATH 5333: Linear Algebra and Matrices
   - One of the following three courses:
     MATH 5356: Applied Multivariate Statistical Analysis
     MATH 5357: Sample Surveys
     MATH 5392: Regression Analysis

   MATH 5305: Statistical Methods
   MATH 5312: Mathematical Statistics I
   MATH 5313: Mathematical Statistics II
   Core requirements can also be fulfilled by completing core requirements in the B.S.-Ph.D. track in the Doctoral program.

   In addition:

   1. Those students enrolled in the thesis substitute plan must take MATH 5395, and all except those in the computer science track must take at least nine other hours of electives.[1]
   2. Those students enrolled in the thesis plan must take at least six hours of MATH 5398-5698, and all except those in the computer science track must take at least three other hours of electives.[1]

[1] Electives may not be chosen from MATH 5336, 5337, 5340-5348, 5352.

Students in every degree plan must pass a final exam.

Master of Arts Degree Requirements

The master of arts program in the Department of Mathematics is designed for those who are interested in strengthening their understanding of mathematics and enriching their mathematics teaching. The program focuses on enhancing mathematics teaching through preparation in topics grounded in secondary school mathematics from an advanced standpoint. The program embraces a philosophy of teaching and learning mathematics that is consistent with the landmark Standards documents produced by the National Council of Teachers of Mathematics.

The requirements for the master of arts degree are 30 hours of graduate courses from the Department of Mathematics and a 3 hour project.

All students must complete the following:

1. Required Courses (6) and Project:
   MATH 5340: Concepts and Techniques in Discrete Mathematics
   MATH 5341: Concepts and Techniques in Geometry
   MATH 5342: Concepts and Techniques in Algebra
   MATH 5343: Concepts and Techniques in Probability and Statistics
   MATH 5344: Mathematics-Specific Technologies
   MATH 5345: Concepts and Techniques in Analysis
   MATH 5395: Project - Individual, Director-Approved Research
2. Elective Courses (4):
   MATH 5300: Computer Programming and Applications
   MATH 5305: Statistical Methods
   MATH 5307: Mathematical Analysis I
   MATH 5308: Mathematical Analysis II
   MATH 5333: Linear Algebra and Matrices
   MATH 5336: Concepts and Techniques in Number Theory
   MATH 5337: Concepts and Techniques in Calculus
   MATH 5346: Concepts and Techniques in Problem Solving
   MATH 5347: Concepts and Techniques in Modeling and Applications
   MATH 5352: Concepts and Techniques in Precalculus
   MATH 5380: Seminar - Study of Current Mathematics Topics
   MATH 5392: Selected Topics in Mathematics

Ph.D. Degree Requirements[2]

A dynamic program leading to the Doctor of Philosophy degree in the mathematics will aim at both real and demonstrated competency on the part of the student over material from various branches of mathematics. The Doctor of Philosophy degree in Mathematics provides a program of study that may be tailored to meet the needs of those interested in applied or academic careers. This program allows students to pursue topics ranging from traditional mathematics studies to applied mathematical problems in engineering and sciences. The nature of the dissertation will range from research in mathematics to the discovery and testing of mathematical models for analyzing given problems in engineering and sciences and in locating and developing mathematical and computational techniques for deducing the properties of these models as to solve these problems effectively and efficiently. Such dissertations will be concerned with research problems from pure mathematics, applied mathematics and statistics.

The Department of Mathematics offers doctoral degree programs in Mathematics (algebra, applied mathematics, game theory, geometry, numerical analysis) and in Statistics.

All doctoral students must complete one of the following:

1. General MATHEMATICS core requirements:
   MATH 5308: Mathematical Analysis II
   MATH 5317: Real Analysis
   MATH 5320: Ordinary Differential Equations
   MATH 5322: Complex Variables
   MATH 5327: Functional Analysis I
   MATH 5331: Abstract Algebra I
   One of the following four courses:
   MATH 5319: Probability Theory
   MATH 5321: Partial Differential Equations
   MATH 5334: Differential Geometry
   MATH 5338: Numerical Analysis I

In addition to the mathematics core requirements students are also required to take three area related courses.

2. General STATISTICS core requirements:
   MATH 5305: Statistical Methods
   MATH 5307: Mathematical Analysis I
   MATH 5308: Mathematical Analysis II
   MATH 5312: Mathematical Statistics I
   MATH 5313: Mathematical Statistics II
   MATH 5317: Real Analysis
   MATH 5319: Probability Theory
   MATH 5322: Complex Variables
   MATH 5327: Functional Analysis I
   MATH 5333: Linear Algebra

In addition to the statistics core requirements, students are also required to take two statistics courses from MATH 5311, 5314, 5353, 5354, 5356, 5357, 5358, 5359, 6353, 6356, 6357.

Students in every degree plan must pass a comprehensive exam.

[2] Effective for students entering the graduate program starting Fall 2001. Returning students may choose the old core requirements.

Ph.D. Degree Requirements for the B.S.-Ph.D. Track

The student must complete either the mathematics or statistics core requirements.

1. General MATHEMATICS core requirements:
   MATH 5307: Mathematical Analysis I
   MATH 5308: Mathematical Analysis II
   MATH 5317: Real Analysis
   MATH 5320: Ordinary Differential Equations
   MATH 5322: Complex Variables
   MATH 5327: Functional Analysis I
   MATH 5331: Abstract Algebra I
   MATH 5333: Linear Algebra
   • One of the following four courses:
      MATH 5319: Probability Theory
      MATH 5321: Partial Differential Equations
      MATH 5334: Differential Geometry
      MATH 5338: Numerical Analysis I

In addition to the mathematics core requirements, the student is required to take three area-related courses.

2. General STATISTICS core requirements:
   MATH 5305: Statistical Methods
   MATH 5307: Mathematical Analysis I
   MATH 5308: Mathematical Analysis II
   MATH 5312: Mathematical Statistics I
   MATH 5313: Mathematical Statistics II
   MATH 5317: Real Analysis
   MATH 5319: Probability Theory
   MATH 5322: Complex Variables
   MATH 5327: Functional Analysis I
   MATH 5333: Linear Algebra

In addition to the statistics core requirements, the student is also required to take two statistics courses from MATH 5311, 5314, 5353, 5354, 5356, 5357, 5358, 5359, 6353, 6356, 6357.

The requirements for the preliminary and comprehensive examinations are the same as the other tracks in the Ph.D. program.

For additional information on the mathematics program, see the program entry in the Interdepartmental and Intercampus Programs section of this catalog.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Mathematics (MATH)

5191. SEMINAR FOR TEACHING ASSISTANTS (0-1). This course is mandatory for all mathematics graduate teaching assistants. Students will be instructed on classroom procedures and strategies and will be required to deliver lectures under the supervision of math faculty. The purpose is to develop students to be effective lecturers. Admittance to this course is restricted to Math TAs.

5300. INTRODUCTION TO SCIENTIFIC COMPUTING (3-0). Introduction to scientific computing utilizing algorithmic languages and operating environment such as Fortran, MATLAB, C, and C++ and UNIX (LINUX) operating system. Prerequisite: consent of the instructor.

5302. FUNDAMENTALS OF MATHEMATICAL SCIENCES I (3-0). Matrices and operators, linear spaces, multivariable calculus, dynamical systems, applications. Prerequisites: MATH 3318 and 3330 or consent of the instructor.

5303. FUNDAMENTALS OF MATHEMATICAL SCIENCES II (3-0). Wave propagation, potential theory, complex variables, transform techniques, perturbation techniques, diffusion, applications. Prerequisite: MATH 5302 or consent of the instructor.

5304. GENERAL TOPOLOGY (3-0). Introduction to fundamentals of general topology. Topics include product spaces, the Tychonoff theorem, Tietzes Extension theorem, and metrization theorems. Prerequisite: MATH 4304 or 4335.

5305. STATISTICAL METHODS (3-0). Topics include descriptive statistics, numeracy, and report writing; basic principles of experimental design and analysis; regression analysis; data analysis using the SAS package. Prerequisite: consent of the instructor.

5307. MATHEMATICAL ANALYSIS I (3-0). Elements of topology, real and complex numbers, limits, continuity, and differentiation, functions of bounded variation, Riemann-Stieltjes integrals. Prerequisite: MATH 4335 or consent of Graduate Advisor.

5308. MATHEMATICAL ANALYSIS II (3-0). Analysis in Rn, limits, continuity, Jacobian, extremum problems, multiple integrals, sequences and series of functions, Lebesgue integral. Prerequisite: MATH 5307 or consent of Graduate Advisor.

5310. MATHEMATICAL GAME THEORY (3-0). Two person null sum games. Bimatrix games and Nash equilibrium points. Noncooperative games, existence theorem. Cooperative games, core, Shapley value, the nucleolus. Cost allocation. Market games. Simple games and voting. Prerequisite: MATH 5330.

5311. APPLIED PROBABILITY AND STOCHASTIC PROCESSES (3-0). Topics include conditional expectations, law of large numbers and central limit theorem, stochastic processes, including Poisson, renewal, birth-death, and Brownian motion. Prerequisite: MATH 3313 or equivalent.

5312. MATHEMATICAL STATISTICS I (3-0). Basic probability theory, random variables, expectation, probability models, generating functions, transformations of random variables, limit theory. Prerequisite: MATH 5307 or concurrent registration or consent of instructor.

5313. MATHEMATICAL STATISTICS II (3-0). Theories of point estimation (minimum variance unbiased and maximum likelihood), interval estimation and hypothesis testing (Neyman-Pearson and likelihood ratio tests), regression analysis and Bayesian inference. Prerequisite: MATH 5312.

5314. EXPERIMENTAL DESIGN (3-0). This course covers the classical theory and methods of experimental design, including randomization, blocking, one-way and factorial treatment structures, confounding, statistical models, analysis of variance tables and multiple comparisons procedures. Prerequisite: MATH 5305 or equivalent.

5315. GRAPH THEORY (3-0). Algorithms for problems on graphs. Trees, spanning trees, connectedness, fundamental circuits. Eulerian graphs and Hamiltonian graphs. Graphs and vector spaces, matrices of a graph. Covering and coloring. Flows. Prerequisite: MATH 3314.

5316. COMBINATORIAL OPTIMIZATION (3-0). Shortest paths. Minimum weight spanning trees and matroids. Matchings and optimal assignment. Connectivity. Flows in networks, applications. Prerequisite: MATH 3314.

5317. REAL ANALYSIS FOR THE MATHEMATICAL SCIENCES (3-0). Lebesgue measure and integration on Rn. Study of LP spaces. Abstract measure and integration. Prerequisite: MATH 5308.

5318. FUNDAMENTALS OF STOCHASTIC ANALYSIS (3-0). General properties of stochastic processes, processes with independent increments, martingales, limit theorems including invariance principle, Markov processes, stochastic integral, stochastic differential. Prerequisite: MATH 5308.

5319. PROBABILITY THEORY (3-0). Probability spaces, random variables, filtrations, conditional expectations, martingales, strong law of large numbers, ergodic theorem, central limit theorem, Brownian motion and its properties. Prerequisite: MATH 5308.

5320. APPLIED DIFFERENTIAL EQUATIONS (3-0). Fundamentals of the theory of systems of ordinary differential equations: existence, uniqueness, and continuous dependence of solutions on data; linear equations, stability theory and its applications, periodic and oscillatory solutions. Prerequisite: MATH 5307 and 5333.

5321. APPLIED PARTIAL DIFFERENTIAL EQUATIONS (3-0). General first order equations. Basic linear theory for elliptic, hyperbolic, and parabolic second order equations, including existence and uniqueness for initial and boundary value problems. Prerequisites: MATH 5307 and 5333.

5322. COMPLEX VARIABLES I (3-0). Fundamental theory of analytic functions, residues, conformal mapping and applications. Prerequisite: MATH 5307.

5325. ALGEBRAIC NUMBER THEORY (3-0). Field extensions, number fields and number rings, ramification theory, class groups, elliptic curves and their group structure, applications to Fermat's last theorem. Prerequisite: MATH 3321.

5326. ALGEBRAIC TOPOLOGY (3-0). Fundamental groups, covering space, singular homology, relative homology, Mayer-Vietoris sequence, Betti numbers, Euler characteristic. Prerequisites: MATH 3321, MATH 3335.

5327. FUNCTIONAL ANALYSIS I (3-0). Introduction to Hilbert and Banach spaces: Hahn-Banach, Banach-Steinhaus, and closed graph theorems. Riesz representation theorem and bounded linear operators in Hilbert space. Prerequisite: MATH 5308.

5328. FUNCTIONAL ANALYSIS II (3-0). The theory of distributions and Sobolev spaces, with applications to differential equations. Compact operators and Fredholm theory. Spectral theory for unbounded operators. Prerequisite: MATH 5327.

5330. ALGEBRAIC GEOMETRY (3-0). Theory of ideals in polynomial rings, Nullstellensatz, Hilbert's basis theorem, Groebner basis and computation in polynomial rings, affine and projective varieties, singular and smooth points on varieties. Prerequisite: MATH 3321.

5331. ABSTRACT ALGEBRA I (3-0). Zorn's Lemma, groups, including free groups and dihedral groups. Rings including factorization, localization, rings of polynomials, and formal power series. An introduction to modules. Prerequisite: MATH 3321.

5332. ABSTRACT ALGEBRA II (3-0). Modules, including free, projective, and injective. Exact sequences and tensor products of modules. Chain conditions, primary decomposition, Noetherian rings and modules. Prerequisite: MATH 5331.

5333. LINEAR ALGEBRA AND MATRICES (3-0). Vector spaces, their sums, linear (in)dependence, bases, linear maps and their matrices, change of basis, inner-products, adjoints, diagonalization, eigenvectors and generalized eigenvectors, eigenvalues, Jordan form, characteristic and minimal polynomials, dual vector spaces, bilinear and quadratic forms. Prerequisite: MATH 3330 or consent of instructor.

5334. DIFFERENTIAL GEOMETRY (3-0). Introduction to the theory of curves and surfaces in three dimensional Euclidean space. Prerequisite: MATH 4334 or 4335.

5336. CONCEPTS AND TECHNIQUES IN NUMBER THEORY (3-0). Topics include mathematical induction, fundamental theorem or arithmetic, inequalities, special sequences and sums, divisibility properties, greatest common divisor, division and Euclidean algorithm, properties of congruence and Diophantine equations.

5337. CONCEPTS AND TECHNIQUES IN CALCULUS (3-0). Topics studied include limits, continuity, differentiation, integration, numerical approximations, applications and Taylor series.

5338. NUMERICAL ANALYSIS I (3-0). Solution of equations including linear and nonlinear systems, interpolation and approximation, spline, numerical differentiation and quadrature. Prerequisite: MATH 2425 or consent of the instructor.

5339. NUMERICAL ANALYSIS II (3-0). Rigorous treatment of numerical aspects of linear algebra and numerical solution of ordinary differential equations, boundary value problems, introduction to numerical solution of partial differential equations. Prerequisite: MATH 5338 or consent of the instructor.

5340. CONCEPTS AND TECHNIQUES IN DISCRETE MATHEMATICS (3-0). Topics include functions, mathematical induction,

principles of counting, combinatorics, sequences and recurrence relations, and finite graph theory.

5341. CONCEPTS AND TECHNIQUES IN GEOMETRY (3-0). Selected materials from geometry.

5342. CONCEPTS AND TECHNIQUES IN ALGEBRA (3-0). Selected materials from algebra.

5343. CONCEPTS AND TECHNIQUES IN PROBABILITY AND STATISTICS (3-0). Consideration of (1) exploring data: descriptive statistics of situations involving one and two variables; (2) anticipating patterns: probability and simulation; (3) design of experiments and planning a study; (4) statistical inference: confirming models. Use of a graphing calculator and other appropriate technology.

5344. MATHEMATICS-SPECIFIC TECHNOLOGIES (3-0). Focus on use of current mathematics-specific technologies for enhancing mathematical understanding and mathematics teaching. May include use of Geometer's Sketchpad, Fathom, graphing calculators and computer algebra systems.

5345. CONCEPTS AND TECHNIQUES IN ANALYSIS (3-0). Selected materials from analysis including concepts and topics consistent with precalculus and elementary calculus.

5346. CONCEPTS AND TECHNIQUES IN PROBLEM SOLVING (3-0). Instruction in the application of various heuristics or general problem strategies.

5347. CONCEPTS AND TECHNIQUES IN MATHEMATICAL MODELING WITH APPLICATIONS (3-0). Topics studied include algebraic, graphical, geometrical and numerical techniques to model and solve applied problems.

5350. APPLIED MATHEMATICS I (3-0). Development of models arising in the natural sciences and in engineering. Emphasis will be on the mathematical techniques and theory needed to analyze such models; these include aspects of the theory of differential and integral equations, boundary value problems, theory of distributions and transforms. Prerequisites: MATH 5307 and 5333.

5351. APPLIED MATHEMATICS II (3-0). Continuation of MATH 5350; models arising in the physical sciences whose analysis includes such topics as the theory of operators in a Hilbert space, variational principles, branching theory, perturbation and stability analysis. Prerequisite: MATH 5350.

5352. CONCEPTS AND TECHNIQUES IN PRECALCULUS (3-0). Topics include functions (transcendental, inverse, parametric, polar, transformations), asymptotic behavior, conics, sequences, complex numbers.

5353. APPLIED LINEAR MODELS (3-0). The course covers, at an operational level, three topics: 1) the univariate linear model, including a self-contained review of the relevant distribution theory, basic inference methods, several parameterizations for experimental design and covariate-adjustment models and applications, and power calculation; 2) the multivariate linear model, including basic inference (e.g., the four forms of test criteria and simultaneous methods), applications to repeated measures experiments and power calculation; and 3) the univariate mixed model, including a discussion of the likelihood function and its maximization, approximate likelihood inference, and applications to complex experimental designs, missing data, unbalanced data, time series observations, variance component estimation, random effects estimation, power calculation and a comparison of the mixed model's capabilities relative to those of the classical multivariate model. Knowledge of the SAS package is required. Prerequisite: MATH 5358 (Regression Analysis) or equivalent.

5354. CATEGORICAL DATA ANALYSIS (3-0). This course covers classical methods for analyzing categorical data from a variety of response/factor structures (univariate or multivariate responses, with or without multivariate factors), based on several different statistical rationales (weighted least squares, maximum likelihood and randomization-based). Included are logistic regression, multiple logit analysis, mean scores analysis, observer agreement analysis, association measures, methods for complex experimental designs with categorical responses and Poisson regression. The classical log-linear model for the association structure of multivariate responses is briefly reviewed. Randomization-based inference (e.g., Mantel-Haenzel) is discussed as well. The necessary distribution theory (multinomial, asymptotics of weighted least squares and maximum likelihood) are discussed at an operational level. Knowledge of the SAS package is required. Prerequisite: MATH 5358 (Regression Analysis).

5355. STATISTICAL THEORY FOR RESEARCH WORKERS (3-0). Designed for graduate students not majoring in mathematics. Topics include basic probability theory, distributions of random variables, point estimation, interval estimation, testing hypotheses, regression, and an introduction to analysis of variance. Graduate credit not given to math majors. Prerequisite: MATH 2325.

5356. APPLIED MULTIVARIATE STATISTICAL ANALYSIS (3-0). Statistical analysis for data collected in several variables, topics including sampling from multivariate normal distribution, Hotelling's T'2, multivariate analysis of variance, discriminant analysis, principal components, and factor analysis. Prerequisite: MATH 5312 or consent of instructor.

5357. SAMPLE SURVEYS (3-0). A comprehensive account of sampling theory and methods, illustrations to show methodology and practice, simple random sampling, stratified random sample, ratio estimates, regression estimates, systematic sampling, cluster sampling, and nonsampling errors. Prerequisite: MATH 5312 or consent of instructor.

5358. REGRESSION ANALYSIS (3-0). A comprehensive course including multiple linear regression, non-linear regression and logistic regression. Emphasis is on modeling, inference, diagnostics and application to real data sets. The course begins by developing a toolbox of methods via a sequence of guided homework assignments. It culminates with projects based on consulting-level data analysis problems involving stratification, covariate adjustment and messy data sets. Some knowledge of the SAS package is required. Prerequisites: MATH 5305, basic knowledge of matrices.

5359. SURVIVAL ANALYSIS (3-0). This course covers analysis of lifetime data, which has applications to actuarial science and health fields. Topics include the survivor function, hazard function, censoring, parametric regression models (e.g., the weibull), nonparametric regression models (e.g., the Cox proportional hazards model), categorical survival data methods, competing risks and methods for multivariate survival data. Knowledge of the SAS package is required. Prerequisites: MATH 5358 (Regression Analysis) and preferably MATH 5313. (Students without 5313 can still succeed if they have some basic calculus-based probability, such as MATH 3313).

5361. APPLIED CALCULUS OF VARIATION (3-0). Functionals, variation, extremization, Euler's equation, direct and indirect approximation methods; applications to mechanics and control theory. Prerequisite: MATH 5302.

5362. MATHEMATICS OF LINEAR PROGRAMMING (3-0). The simplex method and the revised simplex method. Linear algebra for polyhedra and polytopes. Duality theory. Sensitivity analysis. Applications to transportation problems, network flow problems, matrix-games and scheduling problems. Integer programming. Quadratic programming. Prerequisite: MATH 3330.

5363. OSCILLATIONS AND WAVES (3-0). Development of methods and results related to phenomena in nature that exhibit oscillatory motion; mathematical techniques include Fourier series, ordinary and partial differential equations, and the theory of almost periodic functions. Prerequisite: MATH 3318.

5364. INTRODUCTION TO MATHEMATICAL CONTROL THEORY (3-0). Systems in science, engineering, and economics and their mathematical description by means of functional equations (ordinary, partial, integral, delay-type). Basic properties of various classes of systems: observability, controllability, stability, and oscillating systems; optimal control problems and applications. Prerequisite: MATH 3318 or 4320.

5365. BIOMATHEMATICS (3-0). Mathematical techniques used in modeling such as perturbation theory, dimensional analysis, Fourier analysis, and differential equations. Applications to morphogenetics, population dynamics, compartmental systems, and chemical kinetics.

5366. INTRODUCTION TO NEURAL AND COGNITIVE MODELING (3-0). Principles of neural network modeling; application of these principles to the simulation of cognitive processes in both brains and machines; models of associative learning, pattern recognition, and classification. Prerequisite: consent of instructor.

5371. APPLIED NUMERICAL LINEAR ALGEBRA (3-0). Numerical solutions of linear algebraic systems, least squares problems, and eigenvalue problems; LU and QR decompositions, Schur and Singular Value decompositions, Gaussian elimination, QR algorithm, and Krylov subspace iterations for large and sparse linear algebra problems. Prerequisites: MATH 3330 or consent of the instructor.

5372. OPTIMIZATION METHODS AND NUMERICAL SOLUTIONS OF NONLINEAR EQUATIONS (3-0). Unconstrained and constrained optimization, solutions of nonlinear system of equations; Newton and quasi-Newton methods, secant methods and variations, nonlinear least squares problems. Prerequisite: MATH 5308 or consent of the instructor.

5373. NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS (3-0). Numerical methods for approximating solutions of initial value problems, boundary value problems, including linear multistep methods, Runge-Kutta methods, shooting methods. Prerequisite: MATH 5300, 3319 or consent of instructor.

5374. NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS (3-0). Numerical methods for elliptic, parabolic, hyperbolic, mixed, and systems of partial differential equations; finite difference methods, finite element methods, spectral methods. Prerequisite: MATH 5373 or consent of instructor.

5380. SEMINAR (3-0). Current topics in mathematics, may be repeated for credit twice. Prerequisite: consent of instructor.

5391. SPECIAL TOPICS IN MATHEMATICS (3-0). Topics in mathematics assigned individual students or small groups. Faculty members closely supervise the students in their research and study. In areas where there are only three hours offered, the special topics may be used by students to continue their study in the same area. Graded P/F/R. Prerequisite: permission of instructor.

5392. SELECTED TOPICS IN MATHEMATICS (3-0). May vary from semester to semester depending upon need and interest of the students. May be repeated for credit. Prerequisite: permission of Graduate Advisor.

5395. SPECIAL PROJECT (3-0). Graded P/F/R. Prerequisite: permission of Graduate Advisor.

5398. THESIS (3-0). 5398 Graded R/F only; 5698 graded P/F/R. Prerequisite: permission of Graduate Advisor.

5698. THESIS (6-0). Graded P/F/R. Prerequisite: permission of Graduate Advisor.

6313. TOPICS IN PROBABILITY AND STATISTICS (3-0). May be repeated for credit when the content changes.

6353. GENERALIZED LINEAR MODELS (3-0). This course covers modern methods for analyzing Bernoulli, multinomial and count data. It begins with a development of generalized linear model theory, including the exponential family, link function and maximum likelihood. Second is a discussion of the case of models for independent observations. Next is a discussion of models for repeated measures, based on quasi-likelihood methods. These include models (such as Markov chains) for categorical time series. Next is a treatment of models with random effects. Finally is a discussion of methods for handling missing data. Knowledge of the SAS package is required. Prerequisites: MATH 5358 (Regression Analysis) and preferably MATH 5313. (Students without 5313 can still succeed but must deal with the slightly higher mathematical level of this course.)

6356. TIME SERIES ANALYSIS (3-0). This course covers classical methods of time series analysis, for both the time and frequency domains. For covariance stationary series, these include ARIMA modeling and spectral analysis. For nonstationary series, they include methods for detrending and filtering. Also included is a treatment of multivariate series, as well as a discussion of the Kalman filter state-space model. Knowledge of the SAS package is required. Prerequisites: MATH 5358 (Regression Analysis) and MATH 5313.

6357. NONPARAMETRIC STATISTICS (3-0). This is a survey of classical nonparametric methods for inference in standard observational settings (one-sample, two-sample, k-samples and the univariate linear model), and includes a development of U-statistics, rank statistics and their asymptotic distribution theory. The mathematical level is fairly high. Prerequisite: MATH 5313.

6391. SPECIAL TOPICS IN MATHEMATICS (3-0). Faculty directed individual study and research. May be repeated for credit when the content changes.

6399. DISSERTATION (3-0). Prerequisite: admission to candidacy for the Doctor of Philosophy degree in mathematics.

6699. DISSERTATION (6-0). Prerequisite: admission to candidacy for the Doctor of Philosophy degree in mathematics.

6999. DISSERTATION (9-0). Prerequisite: admission to candidacy for the Doctor of Philosophy degree in mathematics.

A limited number of undergraduate mathematics courses may be applicable to a graduate program in mathematics if approved by the Graduate Advisor. These must be chosen from the following list and shall not exceed six hours total credit.

4303. INTRODUCTION OF TOPOLOGY
4313. APPLICATIONS OF MATHEMATICAL STATISTICS
4314. ADVANCED DISCRETE MATHEMATICS
4320. ADVANCED DIFFERENTIAL EQUATIONS
4321. INTRODUCTION TO ABSTRACT ALGEBRA II
4322. INTRODUCTION TO COMPLEX VARIABLES
4324. INTRODUCTION TO PARTIAL DIFFERENTIAL EQUATIONS
4334. ADVANCED MULTIVARIABLE CALCULUS
4335. ANALYSIS II
4345. NUMERICAL ANALYSIS AND COMPUTER APPLICATIONS II

Objective

The objective of graduate work in physics is to prepare the student for continued professional and scholarly development as a physicist. The Physics MS Degree Programs are designed to give the student advanced training in all fundamental areas of physics through formal courses and the options of some degree of specialization or participation in original research in one of a variety of projects directed by the faculty.

The Doctor of Philosophy in Physics and Applied Physics Program combines the traditional elements of a science doctoral program with courses in specifically applied topics and internship in a technological environment. It is designed to produce highly trained professionals with a broad perspective of the subject which may prepare them equally well for careers in academia or government or industry. Current research in the department is predominantly in the areas of condensed matter physics, materials science, astro physics, space physics and high-energy physics and includes a wide range of theoretical work in solid state physics and experimentation in laser physics, optics, positron physics, nano-bio physics, solid state and surface physics, and high-energy physics.

Admission Criteria

Master of Science Program

For unconditional admission to the Master of Science program in physics, the candidate must satisfy the general admission requirements of the Graduate School, including a minimum undergraduate GPA of 3.0 on a 4.0 scale, as calculated by the Graduate School and favorable letters of recommendation from individuals able to assess the applicant's potential for success in a Masters program. In addition, the candidate should have satisfactorily completed at least 24 undergraduate hours of advanced physics and supporting courses and should have minimal GRE scores of 350 in Verbal, and 650 in Quantitative.

Doctor of Philosophy Program

For unconditional admission to the Doctor of Philosophy program, an applicant must have a master's degree or 30 semester hours of graduate credit in physics or a related field and satisfy the general admission requirements of the Graduate School, including a minimum graduate coursework GPA of 3.0 on a 4.0 scale, as calculated by the Graduate School and favorable letters of recommendation from individuals able to assess the applicant's potential for success in a Ph.D. program. In addition, the applicant should have minimal GRE scores of 350 in Verbal, and 650 in Quantitative.

Applicants not meeting the minimum requirements of the department or the Graduate School for either program may still be considered for unconditional acceptance if other information in their application indicates a reasonable probability of success in graduate studies in physics.

Probationary Admission

If an applicant does not meet a majority of standards for unconditional admission outlined above, they may be considered for probationary admission after careful examination of their application materials. Probationary admission requires that the applicant receive a B or better in their first 12 hours of graduate coursework at UT Arlington.

Department of Physics

www.uta.edu/physics/

Areas of Study and Degrees

Physics
M.S.

Physics and Applied Physics
Ph.D.

Master's Degree Plans

Thesis and Non-Thesis

Chair

James L. Horwitz
108 Science Hall
817.272.2266

Graduate Advisors

M.S. Program
Qiming Zhang
337 Chemistry and Physics Building
817.272.2020
zhang@uta.edu

Ph.D. Program
Manfred Cuntz
330 Chemistry and Physics Building
817.272.2467
cuntz@uta.edu

Graduate Faculty

Professors
Black, De, Fry, Horwitz, Koymen, Lopez, Musielak, Ray, Rubins, Sharma, Weiss, White

Associate Professors
Brandt, Cuntz, Liu, Yu, Zhang

Assistant Professors
Chen, Farbin, Fazleev, Su

Deferred and Provisional Admission

A deferred application decision may be granted when a file is incomplete or when a denied decision is not appropriate. An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission.

Denial of Admission

A candidate may be denied admission if he or she have less than satisfactory performance on the admission criteria described above.

Scholarships and Fellowships

Students who are admitted will be eligible for available scholarship and/or fellowship support. Award of scholarships or fellowships will be based on consideration of the same criteria utilized in admission decisions. To be eligible, candidates must be new students coming to UT Arlington in the Fall semester, must have a GPA of 3.0 in their last 60 undergraduate credit hours plus any graduate credit hours as calculated by the Graduate School, and must be enrolled in a minimum of 6 hours of coursework in both long semesters to retain their fellowships.

Degree Requirements: Master of Science

A minimum of 30 hours is required for the Master of Science degree, of which 24 hours, including a six hour thesis (minimum registration), will be in physics, and six hours may be selected from physics, mathematics, chemistry, geology, biology, or engineering as approved by the Graduate Advisor.

Degree Requirements: Doctor of Philosophy

Each candidate must complete the following program requirements:

1. Demonstration of competence in a minimum of 39 credit hours of core courses chosen under the guidance of the supervising committee from the following (or from courses approved in advance by the Graduate Studies Committee):
   Traditional core courses:
   PHYS 5306 Classical Mechanics
   PHYS 5307, 5308 Quantum Mechanics I, II
   PHYS 5309, 5313 Electromagnetic Theory I, II
   PHYS 5310 Statistical Mechanics
   PHYS 5311, 5312 Mathematical Methods in Physics I, II
   PHYS 5315, 5316 Solid State I, II
   Applied Physics core courses:
   PHYS 5314 Advanced Optics
   PHYS 5319 Mathematical Methods in Physics III
   PHYS 6301, 6302, 6303 Methods of Applied Physics I, II, III
   Computer Science as required by the supervising committee.
2. Dissertation and additional research and elective courses chosen under the guidance of the supervising committee.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Physics (PHYS)

5193. READINGS IN PHYSICS (1-0). Conference course. May be repeated for credit.

5194. RESEARCH IN PHYSICS (1-0). Conference course with laboratory. May be repeated for credit.

5294. RESEARCH IN PHYSICS (2-0). Conference course with laboratory. May be repeated for credit.

5305. CHAOS AND NONLINEAR DYNAMICS (3-0). Introduction to basic principles and concepts of chaos theory and their applications in diverse fields of research. Topics include chaotic and non-chaotic systems, stability analysis and attractors, bifurcation theory, routes to chaos and universality in chaos, iterated maps, Lyapunov exponents, fractal dimensions, multifractals, hamiltonian chaos, quantum chaos, controlling chaos, self-organized systems, and theory of complexity.

5306. CLASSICAL MECHANICS (3-0). General principles of analytical mechanics, the kinematics of rigid bodies, canonical transformation, Hamilton-Jacobi theory.

5307. QUANTUM MECHANICS I (3-0). Matrix formulation, theory of radiation, angular momentum, perturbation methods.

5308. QUANTUM MECHANICS II (3-0). Approximate methods, symmetry and unitary groups, scattering theory.

5309. ELECTROMAGNETIC THEORY I (3-0). Boundary value problems in electrostatics and magnetostatics, Maxwell's equations.

5310. STATISTICAL MECHANICS (3-0). Fundamental principles of statistical mechanics, Liouville theorem, entropy, Fermi-Dirac distribution, Bose-Einstein distribution, Einstein condensation, density matrix, quantum statistical mechanics, kinetic methods, and transport theory.

5311. MATHEMATICAL METHODS IN PHYSICS I (3-0). Algebraic and analytical methods used in modern physics. Algebra: matrices, groups, and tensors, with application to quantum mechanics, the solid state, and special relativity. Analysis: vector calculus, ordinary and partial differential equations, with applications to electromagnetic and seismic wave propagation.

5312. MATHEMATICAL METHODS IN PHYSICS II (3-0). Continuation of PHYS 5311 with a selection from the following topics. Algebra: matrix representations of the symmetric and point groups of solid state physics, matrix representations of the continuous groups O(3), SU(2), SU(3), SL(2,C), general covariance. Analysis: further study of analytic functions, Cauchy's theorem, Green's function techniques, orthogonal functions, integral equations.

5313. ELECTROMAGNETIC THEORY II (3-0). Modern tensorial treatment of classical electrodynamics, force on and field of a moving charge, derivation and application of 4-vector potential, Maxwell's equations in tensor form, field momentum and radiation.
5314. ADVANCED OPTICS (3-0). Electromagnetic wave equations, theory of diffraction, radiation scattering and dispersion, coherence and laser optics. Additional advanced topics of current interest.
5315. SOLID STATE I (3-0). Crystal structure, lattice vibration, thermal properties, and band theory of solids.
5316. SOLID STATE II (3-0). Electrical and magnetic properties of crystalline solids, magnetic resonance, and optical phenomena.
5317. STATISTICAL MECHANICS II (3-0). Methods in applied statistical mechanics. Topics may include fluctuations and critical phenomena, the Ising model, the master equation, transport in solids, and chaos.
5319. MATHEMATICAL METHODS IN PHYSICS III (3-0). Numerical methods for applied physics; computer techniques, numerical differentiation, integration, interpolation, extrapolation; differential equations, integral equations, statistical analysis; scientific computer library; artificial intelligence programming.
5320. QUANTUM MECHANICS III (3-0). Quantum theory of radiation; relativistic equations; elements of quantum field theory; symmetries and gauge theories. Applications in elementary particle physics and solid-state physics.
5325. INTRODUCTION TO ELEMENTARY PARTICLES I (3-0). An overview of particles and forces. Particle detectors and accelerators. Invariance principles and conservation laws. Standard model. Electromagnetic, weak, strong, and unified interactions.
5326. INTRODUCTION TO ELEMENTARY PARTICLE PHYSICS II (3-0). Systematics of the quark model; the fundamental interactions of elementary particles; spin and relativistic kinematics; Dirac Equation; the standard electroweak model.
5328. SURFACE PHYSICS (3-0). Experimental and theoretical methods for the study of solid surfaces. Geometric and electronic structure of metals and semiconductors. Surfaces as model systems of reduced dimensionality. Adsorption phenomena and film growth.
5330. PHYSICS OF SEMICONDUCTOR PROCESSING AND CHARACTERIZATION (3-0). Selection from the following topics: physics of crystal growth, lattice defects, impurity diffusion, ion-implantation, thin film growth and plasma etching. Physics of characterization techniques utilizing resistivity, carrier mobility and lifetimes, electrons, x-rays, ions, Rutherford backscattering, neutron activation analysis, positron annihilation spectroscopy, deep-level transient spectroscopy.
5381. MECHANICS AND HEAT FOR TEACHERS (3-0). This course is intended for students who wish to achieve a higher level of knowledge and effectiveness in fundamental physics (not available for M.S. or Ph.D. credit in Physics). Topics include: 1) Newton's laws of motion, gravitation, and planetary motion; 2) the basic laws of thermal and statistical physics; 3) oscillatory motion including waves and sound. Replaceable experiments will be demonstrated throughout the course.
5382. ELECTROMAGNETISM FOR TEACHERS (3-0). This course is intended for students who wish to achieve a higher level of knowledge and effectiveness in fundamental physics (not available for M.S. or Ph.D. credit in Physics). Topics include: 1) Static charges, current flow, electric and magnetic fields; 2) simple DC/AC electrical circuits including examples from household circuit and practical electronic devices; 3) light and optics including examples such as cameras, microscopes and telescopes. Replaceable experiments will be demonstrated throughout the course.
5383. MODERN PHYSICS FOR TEACHERS (3-0). This course is intended for students who wish to achieve a higher level of knowledge and effectiveness in fundamental physics (not available for M.S. or Ph.D. credit in Physics). Topics include: 1) Introduction to special relativity and quantum theory; 2) light and radiation; 3) applications to modern electrical devices; 4) nuclear and particle physics.
5385. PHYSICS LAB TECHNIQUES FOR TEACHERS (0-3). This course is intended for students who wish to achieve a higher level of knowledge and effectiveness in fundamental physics (not available for M.S. or Ph.D. credit in Physics). Experiments demonstrating various topics are covered. Experiments include gravitational acceleration heat flow, harmonic motion, sound, electric magnetic fields, electric circuits, optic, x-rays and nuclear radiation.
5391. SPECIAL TOPICS IN PHYSICS (3-0). Topics in physics, particularly from areas in which active research is being conducted, are assigned to individuals or small groups for intensive investigations. May be repeated for credit.
5393. READINGS IN PHYSICS (3-0). Conference course. May be repeated for credit.
5394. RESEARCH IN PHYSICS (3-0). Conference course with laboratory. May be repeated for credit.
5398. THESIS (3-0).
5694. RESEARCH IN PHYSICS (6-0). Conference course with laboratory. May be repeated for credit.
5698. THESIS (6-0).
6301. METHODS OF APPLIED PHYSICS I—ELECTRONICS (3-0). The analysis and design of electronic circuits for use in the laboratory. Transistors and integrated circuits in analog instrumentation. Digital logic. Information theory and signal processing.
6302. METHODS OF APPLIED PHYSICS II—COMPUTERS IN PHYSICS (3-0). Applications of computers in physics. Acquisition and analysis of experimental data. Vector and parallel processing, image processing, simulation.
6303. METHODS OF APPLIED PHYSICS III—SPECTROSCOPY (3-0). The principles (interactions, cross-sections, elastic and inelastic scattering, diffraction, coherence), the methodologies (sources, detectors, visualization), and applications (structure, dynamics, composition, excitations) of neutral and charged particle spectroscopies to condensed matter physics and materials science.
6304. APPLIED PHYSICS INTERNSHIP (3-0). Applied physics and engineering research and training in industry or other science or engineering departments of UT Arlington or other institutions requiring applied physicists. Faculty supervision and submission of technical progress reports required.
6391. SELECTED TOPICS IN APPLIED PHYSICS (3-0). Topics chosen from research areas in the Department of Physics or at one of the institutions or corporations participating in the traineeship program in applied physics; emphasis on industrial and engineering applications. May be repeated for credit.
6399. DISSERTATION (3-0).
6604. APPLIED PHYSICS INTERNSHIP (6-0). Applied physics and engineering research and training in industry or other science or engineering departments of UT Arlington or other institutions requiring applied physicists. Faculty supervision and submission of technical progress reports required.
6699. DISSERTATION (6-0).
6904. APPLIED PHYSICS INTERNSHIP (9-0). Applied physics and engineering research and training in industry or other science or engineering departments of UT Arlington or other institutions requiring applied physicists. Faculty supervision and submission of technical progress reports required.
6999. DISSERTATION (9-0).

Department of Psychology

www.uta.edu/psychology

Areas of Study and Degrees

Psychology
M.S.
(Specialization in Experimental, Health or Industrial Organizational)

Psychology
Ph.D.
(Specialization in Experimental or Health)

Master's Degree Plans

Thesis (Experimental and Health)
Non-thesis and Thesis (Industrial/Organizational Psychology)

Chair

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Graduate Faculty

Professors
Baum, Gatchel, Ickes, Levine, Mellgren, Paulus

Associate Professors
Fuchs, Jackson, Jensen-Campbell, Kopp, Mann, Peng

Assistant Professors
Basco, Dougall, Frame, Kenworthy, Kimball, Odegard, Perrotti, Scielzo

Adjunct Faculty
Bernstein, Lopez, Lu

Professors Emeritus
Cox, Erickson

Objective

The objective of graduate work in psychology is to educate the student in the methods and basic content of the discipline and to provide an apprenticeship in the execution of creative research.

Graduate work in the master's program and doctoral program will be offered in psychology. Students' individual programs of work may be arranged to give emphasis to a particular aspect of the general program.

Within this framework, options include, but are not limited to, Animal Behavior and Animal Learning, Cognition and Perception, Developmental, Health, Industrial/Organizational, Behavioral Neuroscience, and Social-Personality Psychology. Students specializing in Cognition and Perception may include, in addition to their area C courses (described below), advanced topical seminars in their area of specialty. In addition to core courses (see area A) for those interested in Behavioral Neuroscience, seminars offered in the recent past include Aggression and Nociception. For those seeking expertise in the Social-Personality area, in addition to the area B courses, seminars have included topics such as Social Influence and Empathetic Accuracy and Intersubjectivity.

Research Involvement—Since the Department of Psychology believes that graduate training should involve the student continuously in the research process; students are encouraged to make personal contacts by letter or e-mail with faculty members of their choice. A description of the faculty and their areas of research may be obtained by consulting the department Web page at www.uta.edu/psychology or by writing to or calling the department at 817.272.2281. Every effort will be made to assign the incoming student to a faculty member of choice, but priority is given to those who have discussed their placement in advance.

Deadline for Financial Aid Applications—Students who wish to be considered for assistantships should have their applications and departmental forms sent to The University of Texas at Arlington by February 1 for the fall Semester and September 1 for the spring Semester. Students who do not desire financial aid may apply at any time up to the deadline listed by the Graduate School.

Admission Criteria

There are no fixed criteria for admission to the M.S. or Ph.D. programs in Psychology. Of course, the student is expected to have successfully completed the appropriate work prior to admission. In the case of the M.S. program, an undergraduate B.A. or B.S. degree is required. As calculated by the graduate school, a minimum grade point average of 3.0 (on a 4.0 scale) in undergraduate work is expected for unconditional admission. For the Ph.D., a minimum of 30 graduate hours with a GPA of 3.0 or better as calculated by the Graduate School is required.

Although we typically require at least a 3.0 average for unconditional admission, an average higher than 3.0 will not guarantee admission. Beyond these minimal criteria, there is no single criterion that determines whether a positive or negative admission decision is made.

Our admissions focus is on seeking positive indication of potential success in the program. These indications include:

- A detailed examination of the student's transcript. Overall grade point average per se is not weighed as heavily as other grade indicants (e.g., grades in psychology) since most candidates for admission present averages greater than 3.0. Instead, we examine the coursework as evidence for research interest. Positive indi-

cants of potential success in our program include greater than average work in psychology, the biological and physical sciences and mathematics. In similar fashion, evidence of experimental research previously undertaken is viewed as a predictor of future research. For students interested in specialization in Industrial/Organizational (I/O) Psychology at the Master's level appropriate coursework is taken into consideration.

- Submission of Verbal, Quantitative and Analytical Writing GRE scores is required of all applicants including UT Arlington alumni. High GRE scores in each area are viewed as positive indicants, while a low GRE score on one subscale need not exclude a candidate who shows positive indicants in other areas.
- At least three letters of reference are required and will be used as evidence of strong commitment to experimental research (as in letters from an undergraduate research sponsor). We would prefer, if possible, letters from individuals such as your professors, who can comment on your academic abilities and potential. Evidence of success in employment relevant to I/O psychology will be considered for the Master's degree in that area.
- The personal statement describing the applicant's laboratory, field, or applied interests, career plans and discussion of how the UT Arlington program can serve to further these interests and plans will be examined for evidence of the appropriateness of the candidate to the UT Arlington program.
- Successful completion of a Master's degree in another department is viewed positively even when the degree was received in an area outside of psychology. In this latter case, some conditions in terms of make-up coursework may be specified.
- As the expectation is that students will begin research in their first semester, they will be assigned a faculty member with whom they will work. This assignment will be based on space available in the student's program of interest and the fit of student to specific faculty's research interests. Since each area has its own criteria for admission, undergraduate interests deemed unsuitable by one faculty committee may be acceptable to another. The number of fully acceptable applicants generally exceeds the number admitted.

In summary the department views its mission in the MS/Ph.D program as to train students to be skillful in research. Therefore we seek students who show aptitude in as well as motivation for research. Students interested in the terminal MS program in Industrial/Organizational Psychology will have their records examined for indicants of potential to succeed in industrial settings.

Probationary Admission

If an applicant does not have a majority of the positive indications for unconditional admission described above, they may be considered for probationary admission after careful examination of their application materials. Probationary admission requires that the applicant receive a B or better in their first 12 hours of graduate coursework at UT Arlington.

Deferred Admission

A deferred decision may be granted when a file is incomplete or when a denied decision is not appropriate.

Provisional Admission

An applicant unable to supply all documentation (including certified transcripts, GRE scores, letters of reference, and personal statements) prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission.

Denial of Admission

Applicants whose records in the aggregate do not show sufficient positive indications of potential success will be denied admission.

Eligibility for Scholarships/Fellowships

Students unconditionally admitted to the program are eligible for scholarship and fellowship support. The criteria applied will be the same as those applied to admission decisions. To be eligible, candidates must be new students coming to UT Arlington in the fall semester, must have a GPA of 3.0 in their last 60 undergraduate credit hours plus any graduate credit hours as calculated by the Graduate School, and must be enrolled in a minimum of 6 hours of coursework in both long semesters to retain their fellowships.

Degree Requirements

In addition to the requirements outlined elsewhere, the Department of Psychology will require undergraduate courses in statistics and in experimental methods. These courses may be taken as deficiency courses.

Degree requirements for the Department of Psychology are established by the Committee on Graduate Studies in Psychology and supplement those established by the University (see general requirements of the Graduate School as stated under the section entitled "Admission Requirements and Procedures").

Each entering graduate student will be furnished a copy of the departmental rules which will serve as guidelines for departmental actions and recommendations.Students are urged to consult the Department of Psychology's Graduate Student Handbook to obtain the most up-to-date information on department policies and practices that may impact their degree plans.

Each student must adhere to the code of ethics of the American Psychological Association.

Master of Science Degree

As soon as is feasible, a student should decide on an area for specialization and research. After discussion with and consent of the involved faculty members, the student selects a supervising professor and a thesis committee. No student may enroll in PSYC 5698 until the thesis committee has approved a proposal for the thesis project.

Specialization in Experimental Psychology: 30 hours, including six hours of thesis are required for this option. The program is designed to form the basis for the doctoral program. It is, however, open to those seeking a terminal master's degree. PSYC 5405, 5407, and 12 hours among 5313, 5321, 5322, 5333, 5345, and 6336 are required, including at least three hours from each area A, B, and C (see following).

Specialization in Health Psychology: 30 hours in psychology, including six hours of thesis are required for this option. The program is designed to form the foundational work for the doctoral program. Students are required to complete the statistics sequence in the department (PSYC 5405, 5407) and core courses in research methods (PSYC 5307), health psychology (PSYC 5309, and learning (PSYC 5313, 5314, 5345 or 6312) and at least one biological foundations course (PSYC 5333). In addition, students should enroll in PSYC 6102, Proseminar in Health Psychology, each long semester of graduate study. Please see the department's Graduate Handbook for suggested course sequences and degree plans. As for the experimental psychology specialization, thesis research and document are also required.

Specialization in Industrial/Organizational (I/O) Psychology: 45 hours in psychology and management are required for this degree,

including six hours of internship. The program is designed as a terminal degree for those interested in careers in industrial/organizational psychology. Thirty-nine hours are required in psychology. These are PSYC 5405, 5407, 5322, 5323, 5325, 5326, two approved psychology electives, six hours of internship (PSYC 5327), four hours of Proseminar in I/O Psychology (PSYC 6110) and a capstone course (PSYC 5390). A master's thesis (PSYC 5698) may be substituted for the capstone, only upon approval from the director. Two management elective courses are should be selected from MANA/PSYC 5312, MANA/PSYC 5340, MANA 5321, 5323, 5325, 5326, 5327, 5334, 5342 and PSYC 6300. Approval for PSYC 6300 is required prior to enrollment. Students typically start an internship in the summer after the first year and the capstone course at the end of their second year. The Master's degree provides professional training to those not wishing to pursue doctoral studies

A typical program of study might look like this:

Year	Fall	Spring	Summer
01	Proseminar in I/O Psychology, Statistics, I/O Psychology Course (Personnel Psychology or Organizational Psychology), Psychology (Core Course or Elective)	Proseminar in I/O Psychology Statistics, Psychology (Core Course or Elective), Management Elective	Internship and/or Management Elective (optional)
02	Proseminar in I/O Psychology, I/O Psychology Course (Personnel Psychology or Organizational Psychology), Psychology (Core Course or Elective), Management Elective	Proseminar in I/O Psychology, Psychology (Core Course or Elective), Internship, Capstone	Internship and/or Capstone may be completed during the second summer (requires summer graduation)

Note: This is based on a 2-year program of study. Students may adjust the speed at which milestones are achieved.

Doctor of Philosophy

The degree of Doctor of Philosophy in psychology requires distinguished attainments in both scholarship and original research, and the deep understanding of the strategic role of thoughtful experimentation in the development of an empirical science. Although the student must meet the minimum requirements of a planned course of study, the ultimate basis for conferring the degree must be the demonstrated ability to do independent and creative work and the exhibition of a profound grasp of the subject matter of the field.

Computer Knowledge Requirement: Because of the fundamental and varied ways in which computers are applied in psychology, students are expected to understand their use and application in psychological research. Specifically, students are expected to demonstrate competence in the use of operating systems such as Windows or the Macintosh System, e-mail and other aspects of the Internet, standard office packages, data bases, programming languages (with specific reference to the programming of psychological experiments) and statistical packages such as SAS and SPSS. This computer knowledge requirement has been established in lieu of the foreign language requirement.

Specialization in Experimental Psychology

The specialization in experimental psychology allows students to work in a general experimental context while specializing in one of several areas (e.g., cognitive psychology, social psychology, neuroscience and so on).

Course requirements: Graduate students entering the experimental specialization will be required to take the following courses during their first four semesters of enrollment. Exceptions may be made only with written permission of the Committee on Graduate Studies.

Professional Development (5110 and 5112)
Statistics I (5405)
Statistics II (5407)

Four of the following courses, at least one from each area A, B, and C:
Area A: 5333 Behavioral Neuroscience, 6336 Comparative Psychology
Area B: 5321 Personality, 5322 Social Psychology
Area C: 5313 Higher Mental Processes, 5345 Human Learning and Memory

Students with prior graduate work may be waived from any of the above requirements by a written request to the Committee on Graduate Studies. The request should include a syllabus or other documentation showing that a prior course and one of our required courses are equivalent. Students should discuss course equivalency with the professor(s) who teach the course(s) in question before submitting a request. Having fulfilled the above, the following are required:

- An additional five courses (15 hours) from among lecture courses.
- Two six-hour research courses. These may be taken from PSYC 5698 or PSYC 5600. Students who plan to obtain the MS should elect PSYC 5698 as one of the research courses and students who do not plan to obtain the MS should select two sections of PSYC 5600. If the student does not elect to obtain the MS, one of the research courses must result in a formal thesis-equivalent paper, which will be evaluated by a committee and defended in an oral examination. The two research courses are a minimum requirement. Students are strongly encouraged to take PSYC 5391 or 6391 before taking PSYC 5600 and PSYC 5698.
- Nine hours of PSYC 6300.
- Additional hours of coursework to be determined by the Graduate Advisor and dissertation committee. The student should plan to take approximately 86 hours including 6999. At least 45 of these hours must be in organized courses, lectures or seminars. No student may enroll in a dissertation course until the dissertation committee has approved a proposal for the dissertation project.

A student has completed the course requirements when he or she has:

- Maintained at least a B average in 5405 and 5407.
- Maintained at least a B average in his or her area A, B, and C courses.
- Received at least a B average in all other courses.

A typical program of study might look like this:

Year	Fall	Spring
01	Statistics I, an A, B or C core course, Professional Development I, Readings and/or Research elective	Statistics II, an A, B or C core course, Professional Development II, Readings and/or Research elective
02	An A, B, or C core course, Seminar, Lecture Electives and/or Thesis	An A, B, or C core course, Seminar, Lecture Electives and/or Thesis
03	Lecture Electives and/or Thesis, Seminar, Readings and/or Research elective	Lecture Electives and/or Seminar, Readings and/or Research elective
04	Lecture Electives and/or Thesis, Seminar, Readings and/or Research elective Dissertation Research	Lecture Electives and/or Thesis, Seminar, Readings and/or Research elective Dissertation Research
05	Dissertation Research	Dissertation Research

Note: This is based on a 5-year program of study. Students may adjust the speed at which milestones are achieved by adding 4th year courses earlier.

Prerequisite Conditions for the Qualifying Examination

In order to begin working on the qualifying exam, students must complete the Departmental MS Core Curriculum requirements as set forth elsewhere in the catalog. Generally, these course requirements will be met within the first two years of graduate enrollment. Students must also satisfactorily participate in the Research Progress Symposium (RPS). Finally, a Master's Thesis (or equivalent) must be completed. Students entering the program with a master's degree must complete the Departmental MS Core Curriculum requirements and satisfactorily participate in the RPS before being invited to begin work on the Qualifying Examination. Upon completion of these prerequisite conditions, students have one year to complete their Qualifying Examination. This process consists of a Major Area Paper (MAP) and an oral defense, both of which must be completed within one year.

MAP and MAP Oral Defense

The MAP consists of a comprehensive review paper, which is a summary, integration, and critical review of the literature relevant to a general theme or topic. It is expected that the student will offer a novel and forward-thinking perspective on the topic area. The MAP does not directly propose research hypotheses and designs, nor does it involve the collection of primary-level data. It may be either a quantitative review (i.e., a meta-analysis) or a more qualitative review. It should contain a concluding section in which novel ideas are proposed and elaborated upon, and which will form a basis for the MAP Oral Defense. The topic area and scope of the MAP will be developed with the student's primary faculty mentor and one or two other Department of Psychology Faculty members. The preferred size of the Qualifying Examination Reading Committee is three members, but a two-member Committee is acceptable if an appropriate third member is not available. Students may consult their Committee members for general comments and direction concerning the MAP, but Committee member involvement in the writing of the MAP (including that of the student's Faculty mentor) is expected to be minimal.

Upon submission of the MAP document to the Qualifying Examination Reading Committee, the Committee will evaluate the MAP in terms of its potential contribution to the student's chosen field, and in terms of the degree to which it represents Ph.D.-level thinking, communication, independence, and scholarship. Ordinarily, the Qualifying Examination Reading Committee will take no longer than two weeks to evaluate the MAP and communicate their decision to the student. If the Committee determines that the MAP is unacceptable, the student will be given three months to revise it for a second evaluation by the Committee. If the revised version of the MAP is also judged to be unacceptable, the student will not be invited to pursue the Ph.D. degree in the UT Arlington Graduate Program in Psychology. Such a student's Master's degree will thus be his/her terminal degree.

If and when the MAP is deemed acceptable by the Committee, the Committee will invite the student to a MAP Oral Defense, which will take place no sooner than two weeks following communication from the Committee to the student that the student's MAP is acceptable. The MAP Oral Defense consists only of the student and Committee members, and is not open to other students, faculty, staff, or the general public. In this meeting, which will normally last between 90 and 120 minutes, Committee members will assess the student's knowledge of the topic area, the theoretical background, the methodologies likely to be employed in related research, limitations to the ideas, and conceptual and practical connections to related issues. The Committee will determine whether or not the student has clearly passed the examination, clearly failed, or passed with conditions which must be met before Ph.D. Candidacy is recommended. Upon passing both the MAP and the MAP Oral Defense, a Diagnostic Evaluation Report form must be completed, signed, and filed.

General Expectations and Stipulations

Upon satisfactory completion of both the MAP and the MAP Oral Defense, students should assemble a Dissertation Committee, which consists of their Faculty mentor and four other faculty members, for a total of five committee members. Students will meet with this Committee to present the proposed research and to solicit input concerning the best ways to accomplish the goals of the Dissertation Proposal. The Dissertation research may be related to, or based upon, the MAP, but this is not required. Upon approval of the Dissertation conceptualization, design, and methods, students will proceed in carrying out the approved plan of research. Please consult the Graduate Catalog and Department Handbook for general expectations regarding the Dissertation.

In addition, consult the Graduate Catalog and Department Handbook for general expectations regarding timelines. Typically, students will complete their Master's Thesis (or equivalent) in the 2nd or 3rd year of graduate studies. Ordinarily, the Qualifying Examination will be completed within one year of successfully completing the prerequisite conditions as outlined above. Because both the MAP and the MAP Oral Defense have a two-week review and planning period, respectively, students must take these weeks into account when planning completion of the Qualifying Examination within one year. Students are also advised to be cognizant of these time frames in the event that they are required to revise their MAP. If the MAP and MAP Oral Defense have not been completed within one year of completion of all prerequisite conditions, students must submit a written explanation to their Qualifying Examination Reading Committee, detailing their progress and their anticipated completion date. Failure to complete the MAP and MAP Oral Defense within one year will also be a consideration in GTA funding decisions."

Comprehensive Examination: Presentation of a dissertation proposal to the student's dissertation supervisory committee constitutes the doctoral "comprehensive examination" for the Department of Psychology. A Request for Comprehensive Examination (PhD) form must be submitted prior to the presentation. A Results of Comprehensive Examination (PhD) form must be submitted after the presentation. These forms are available on-line. Approval of the dissertation proposal by the dissertation supervisory committee is needed before the student is considered to have passed the comprehensive examination.

Specialization in Health Psychology

The concentration in health psychology is designed to train researchers in health and behavior, working at the cutting-edge or interdisciplinary, biomedical and biobehavioral investigation in areas such as pain, stress, psychoimmunology, cancer and aging.

Course requirements: Students seeking to specialize in health psychology will be required to complete the two-course department statistics sequence (PSYC 5405 and PSYC 5407) and Research Methods (PSYC 5307) as well as core courses in Psychological Foundations, including Health Psychology (PSYC 5309), and Learning (Higher Mental Processes–PSYC 5313, Cognitive Development–PSYC 5314, Human Learning and Memory–PSYC 5345, or Animal Learning–PSYC 6312. Students are strongly advised to take History and Systems (PSYC 6316).

In addition, students are required to complete coursework in biological foundations, including systems physiology, neuroscience, and at least one relevant biological or biomedical specialty. A minimum of three foundations courses must be completed and these must include physiology (one of several approved courses offered in other UT departments), and behavioral neuroscience (PSYC 5333). The third required foundations course must be an approved graduate level course in genetics, immunology, endocrinology, or other specialized biomedical topic available at UT Southwestern or another UT Arlington department.

Students must complete seven electives in psychology or in other UT departments that have been approved by the program over the entire course of study. At least 5 must be courses offered by the Department of Psychology. Most department offerings will satisfy this requirement. It is expected that these electives will be advanced seminars and research courses. Students will also be required to enroll and participate in the Health Psychology Proseminar, which will meet weekly for 1 hour as a forum for a variety of seminar activities, presentations, and so on. Students will enroll in this seminar every long semester for the first four years of graduate study.

- 8 hours of Proseminar
- 8 hours of Statistics (2 courses)
- 9 hours of psychological foundations courses (methods, learning, health psychology)
- 9-12 hours biological foundations (3 courses, 3-4 credits each)
- 21 hours electives
- Thesis and dissertation as required

A typical program of study might look like this:

Year	Fall	Spring
01	Statistics, Research Methods, Proseminar	Statistics, Health Psychology, Proseminar
02	Physiology, Elective, Proseminar	Neuroscience, Learning, Proseminar
03	Biological Elective, Elective, Proseminar	Elective, Elective, Proseminar
04	Elective, Elective, Research Proseminar	Elective, Proseminar
05	Research	Research

Note: This is based on a 5-year program of study. Students may adjust the speed at which milestones are achieved by adding 4th year courses earlier.

Research requirements: Research requirements include general expectations of student involvement in research throughout their graduate career and specific milestones that must be accomplished in order, including the masters' research preliminary examination, diagnostic/qualifying examinations, and the dissertation.

Masters' research: Students must complete a significant research project with primary responsibility for its derivation, conduct, and/or analysis. Ordinarily this is done during the first two years of graduate study. This must be completed before students can seek candidacy for the PhD. Students must complete, analyze, and report on a major research project, part or all of which is primarily the student's responsibility. Typically this is an experiment or study. For formal acceptance of an approved thesis so that the student can obtain a MS, university guidelines apply. The thesis committee should consist of 3 program faculty. Alternatively, the committee shall determine accepted format if a MS is not sought.

Preliminary Examination

Students must pass a preliminary exam, typically given at the start of the second year of graduate study. Students write answers to five questions derived from a pre-supplied readings list that test general ability to organize and integrate information and defend positions in areas of psychology. Students will be asked to re-cast, reformulate, challenge, defend, or derive established or novel concepts in psychology. Students who do not pass the exam are usually given the opportunity to retake it. Students may not seek candidacy for the PhD until this requirement has been satisfied. Reading lists are available at least four months before the examination.

Advancement to Candidacy

Once students have passed the Preliminary Exam and have completed the master's thesis or equivalent, they are eligible to undertake the diagnostic/qualifying examination. Successful completion of this exam process produces a recommendation for advancement to candidacy for the PhD. This process consists of two exams. The first is a comprehensive review paper that requires the student to take a novel or speculative perspective and provide an integrative and critical review of relevant literatures. Ordinarily this is completed in the third, or early in the fourth year, and may be incorporated into the introduction for the dissertation. The completed paper should be of a "publishable quality" in the style required for publication in the Psychological Bulletin. The

student must assemble a two-person faculty committee (both should be program faculty) for this requirement and should meet with them at least twice, to get the topic and scope of the paper approved, and for final approval of the paper. Meetings may also be scheduled at variable intervals depending on the committee and student.

The second part of the diagnostic/qualifying examination is an oral examination, typically 90-120 minutes long, on the student's area of specialization. This will be completed after the third-year paper above has been formally accepted and will involve a student and a committee of three program faculty. In this examination, the student will present a proposition or series of propositions and a proposal to study them, and the committee will examine the student's knowledge of the area, of its methods and limitations, and of how these propositions fit into larger frameworks. The committee will determine whether the student has passed the specialty examination. An initial failure to pass can result in a retake, but continued failure will lead to a recommendation not to advance to candidacy. Passing the specialty and third-year paper requirements will lead to a recommendation for advancement to candidacy to the members of the Committee on Graduate Studies.

Dissertation

Upon advancement to candidacy, each student will assemble a dissertation committee. This committee is formed by the student in consultation with his or her mentor, and will consist of at least five faculty members. At least three of the faculty must be drawn from among Program faculty. The student will initially meet with this committee to present the proposed research, deliberate about the best ways to accomplish particular goals, and so on. Approval of the proposal implies that the project's conceptualization, design, and proposal methods are acceptable and that particular results are not required. Once the committee has approved the proposal (this may occur at the end of the first, or after two or more meetings), the student enrolls in dissertation research (6X99) and conducts his/her dissertation research. During this period, meetings with the committee are on an "as needed" basis. During the data analysis phase, the student may wish to schedule an informal meeting. Similarly, during writing of the dissertation, the committee may or may not meet. When a student has completed a draft of the dissertation that the primary mentor deems appropriate for his or her committee, a date for the oral defense is scheduled, and written drafts must be provided to committee members at least two weeks before this date. The PhD oral examination is conducted by the dissertation committee. The first part of the examination is an oral presentation of the research and its findings. This portion of the meeting is open to any member of the university community and guests. The second part is closed and consists of specific detailed questions about the dissertation. Both oral defense and the written dissertation must be passed.

Specialization in Industrial/Organizational Psychology

Students enrolled in the I/O specialization may apply for admission to either the Experimental specialization or Health specialization in the doctoral program. The requirements for admission will be the same as for other master's level students, which includes completing the core curriculum requirements and an empirical thesis or thesis equivalent. Students intending to pursue their doctoral work at another university should be aware that a non-thesis master's may oblige them to meet many additional requirements at their future university, a burden that may be reduced by pursuing a master's degree in psychology at UT-Arlington.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Psychology (PSYC)

5110. PROFESSIONAL DEVELOPMENT I (1-0). The philosophy and methods of conducting a university class for undergraduates are examined. Specific tips and suggestions for managing course materials, lectures, audiovisual aids, grading, etc. will be presented. The role of the university instructor as a researcher as well as a teacher will be elaborated. Specific topics will include the ethics and regulation of research, service as a journal referee, corresponding with peers, participating in a research team, manuscript preparation, presentation at professional conferences, and submitting material for publication. Prerequisite: admission to the graduate program in psychology or permission of the instructor. Graded F, P. Prerequisite: Admission to the graduate program in psychology or permission of the instructor.

5112. PROFESSIONAL DEVELOPMENT II (1-0). An introduction to the skills associated with the conduct of psychology as a science and as a profession. Individual faculty will be invited to present techniques and approaches that they see as useful and necessary to the application of the specialty in psychological research and problem-solving. Graded F, P. Prerequisite: Admission to the graduate program in psychology or permission of the instructor.

5151. READINGS IN PSYCHOLOGY (1-0). Independent readings under the supervision of an individual faculty member. Students wishing to conduct research should sign up for PSYC 5191, 5291, or 5391. May be repeated for credit with consent of the Graduate Advisor. Graded P/F/R. Prerequisite: consent of the instructor.

5191. RESEARCH IN PSYCHOLOGY (1-0). Independent research under the supervision of an individual faculty member; may be repeated for credit with consent of Graduate Advisor. Graded P/F/R. Prerequisite: consent of the instructor.

5251. READINGS IN PSYCHOLOGY (2-0). Independent readings under the supervision of an individual faculty member. Students wishing to conduct research should sign up for PSYC 5191, 5291, or 5391. May be repeated for credit with consent of the Graduate Advisor. Graded P/F/R. Prerequisite: consent of the instructor.

5291. RESEARCH IN PSYCHOLOGY (2-0). Independent research under the supervision of an individual faculty member; may be repeated for credit with consent of Graduate Advisor. Graded P/F/R. Prerequisite: consent of the instructor.

5307. RESEARCH METHODS (3-0). This course considers basic and advanced aspects of methodology used in psychological research, including experimental design, methodologies that combine disciplinary approaches (e.g., biomedical, behavioral, and field and laboratory approaches).

5309. HEALTH PSYCHOLOGY (3-0). A survey of current theory and research in health psychology, including basic research in health and behavior, biobehavioral contributions to illness and disability, and fundamental relationships among the brain, bodily function, and behavior that may affect health and well-being. It will also include clinical and translational topics including patient interventions in medically-ill populations, pain management, and disease prevention.

5310. MATHEMATICAL MODELS IN PSYCHOLOGY (3-0). Elementary probability theory, matrix algebra, and theory of linear difference equations applied to theoretical problems in learning, signal detection, decision processes, and social interactions.

5312. MANAGEMENT (3-0). Basic exploration of organizations in their environments. The elementary tools of management, which include: organizational objectives, social responsibility and ethics, policies, plans, and decision making; the design of organizations and jobs; the production and technology aspects of organization; the elements of leadership, behavior, and communication; and the elements of control and performance evaluation. Also listed as MANA 5312.

5313. HIGHER MENTAL PROCESSES (3-0). Includes topics such as concept identification, problem solving, reasoning, and knowledge representation.

5314. COGNITIVE DEVELOPMENT (3-0). A survey of current theories of cognitive development. Recent research within topic areas, such as physical reasoning, spatial cognition, memory, and symbol use, will be used to evaluate the theories presented.

5315. BEHAVIOR ANALYSIS (3-0). Overview of operant theory with an emphasis upon contemporary problems. Basic concepts that are covered include: reinforcement and stimulus control, punishment, compound schedules, response topography, and chaining. Other topics include complex human operants, verbal behavior, behavior modification, and contingency management.

5321. PERSONALITY PSYCHOLOGY (3-0). A survey of contemporary topics in personality psychology, including personality assessment, strategies for studying personality, temporal stability and cross-situational consistency in behavior, and personality influence on social behavior.

5322. SOCIAL PSYCHOLOGY (3-0). A survey of contemporary topics in social psychology, including interpersonal attraction, altruism and aggression, attribution and social cognition, social influence, group dynamics, and social motivation.

5323. GROUP PROCESSES (3-0). Survey of the major topics in group dynamics. Among the issues covered will be performance, motivation, goal setting, decision-making, creativity, social influence, memory, leadership, teamwork, and collective behavior.

5325. ORGANIZATIONAL PSYCHOLOGY (3-0). Theory and research concerning human behavior in formal organizations, communication nets, dynamics of managerial jobs, and current ideas concerning organizations will be covered.

5326. PERSONNEL PSYCHOLOGY (3-0). Principles and techniques of employee selection, placement, succession planning, job analysis, recruitment, performance appraisal, validation, test bias and fairness. The use of various quantitative research techniques applied to human resource problems in organizations will be covered.

5327. INDUSTRIAL AND ORGANIZATIONAL INTERNSHIP (3-0). Supervised internship in an organization related to area of major interest. No credit will be given for previous experience or activities. Course may be repeated for credit. Prerequisite: consent of instructor.

5331. PERCEPTION AND ATTENTION (3-0). Survey of methods and findings dealing with perception; emphasis will be upon behavioral rather than physiological considerations; particular topics include signal detection theory, form and pattern recognition, and attentional mechanisms.

5333. BEHAVIORAL NEUROSCIENCE (3-0). A survey of biological and physical processes underlying behavior. Emphasis on neural, hormonal, and genetic determinants of behavior. Topics include regulatory behaviors, reward and nociceptive systems, differentiation and sociosexual behaviors, limbic and cortical functions.

5337. ANIMAL COGNITION AND BEHAVIOR (3-0). A survey of theory and data on how animals learn and represent the world and the evolutionary processes that influence their individual and social behavior.

5340. STRATEGIC HUMAN RESOURCE MANAGEMENT (3-0). Emphasizes strategic perspective of modern human resource management theory and practice. Topics include human resource planning, staffing, training, and development, compensation, performance appraisal, and labor and employee relations. Also listed as MANA 5340.

5341. DECISION MAKING (3-0). Factors that influence categorical and numerical judgments, choices, and preference decisions. Comparison of human decision behavior with various quantitative theories.

5345. HUMAN LEARNING AND MEMORY (3-0). Survey of current approaches to the study of human learning and memory.

5348. EXPOSURE TO CONTEMPORARY PC MICROCOMPUTERS (3-0). Operating systems, ASCII editors, word processors, spreadsheets, graphics, data bases, programming languages, programming psychological experiments, statistical programming, using networks, the Internet, e-mail, Gopher, FTP, and Telnet.

5351. READINGS IN PSYCHOLOGY (3-0). Independent readings under the supervision of an individual faculty member. Students wishing to conduct research should sign up for PSYC 5191, 5291, or 5391. May be repeated for credit with consent of the Graduate Advisor. Graded P/F/R. Prerequisite: consent of the instructor.

5389. CONTEMPORARY PROBLEMS IN PSYCHOLOGY (3-0). Topics vary. May be repeated for credit with consent of Graduate Advisor.

5390. CAPSTONE COURSE IN INDUSTRIAL-ORGANIZATIONAL PSYCHOLOGY (3-0). Designed for students near or at the end of their I-O curriculum to demonstrate the ability to apply knowledge of industrial-organizational psychology.

5391. RESEARCH IN PSYCHOLOGY (3-0). Independent research under the supervision of an individual faculty member; may be repeated for credit with consent of Graduate Advisor. Graded P/F/R. Prerequisite: consent of the instructor.

5405. ADVANCED STATISTICS I (3-1). Basic descriptive and inferential statistics used in psychological research.

5407. ADVANCED STATISTICS II (3-1). Statistical aspects of complex experimental and non-experimental designs used in psychological research. Prerequisite: PSYC 5405, Advanced Statistics I.

5600. ADVANCED RESEARCH (6-0). Supervised research. May be repeated for credit. Graded P/F/R. Prerequisite: permission of instructor.

5610. INDUSTRIAL AND ORGANIZATIONAL INTERNSHIP (6-0). Supervised internship in an organization related to area of major interest. No credit will be given for previous experience or activities. Prerequisite: consent of instructor.

5698. THESIS (6-0). Graded P/F/R. Prerequisite: 12 hours of advanced psychology and an approved thesis proposal.

6101. PROSEMINAR IN HEALTH PSYCHOLOGY (1-0). Professional development seminar will include presentations of ongoing and recently completed research, discussion of best approaches to writing reports and giving research presentations, grant writing skills, and other scientific, professional issues.

6191. RESEARCH IN PSYCHOLOGY (1-0).

6291. RESEARCH IN PSYCHOLOGY (2-0).

6300. SEMINAR IN PSYCHOLOGY (3-0). Offered each semester. Topics vary. May be repeated for credit. Prerequisite: consent of instructor.

6312. ANIMAL LEARNING (3-0). Survey of contemporary topics in animal learning.

6316. HISTORY AND SYSTEMS (3-0). Consideration of the origins of psychology in the development of Western thought. Early conceptualization of problems and their modification with changes in evidence is emphasized.

6318. SOCIAL AND PERSONALITY DEVELOPMENT (3-0). Theory and research on social and emotional development with an emphasis on the interaction between individual needs and abilities and societal expectations and demands.

6320. NEUROPHARMACOLOGY (3-0). Survey of the basis of behavioral pharmacology including mechanisms and theories of drug actions, techniques and strategies of research, common psychoactive drugs, and the uses of drugs in clinical practice.

6335. ANIMAL BEHAVIOR (3-0). Phylogenetic approach to some basic problems in behavior, with special emphasis on unlearned behavior.

6336. COMPARATIVE PSYCHOLOGY (3-0). Theory and data about all aspects of behavior stressing similarities and differences across species.

6338. NEURAL AND COGNITIVE MODELING (3-0). Principles of neural network and dynamical systems modeling; application of these principles to the simulation of cognitive processes in both brains and machines; models of associative learning, pattern recognition and classification, and individual and group behavior. Prerequisite: consent of instructor.

6343. COGNITIVE NEUROPSYCHOLOGY (3-0). Surveys current experimental and clinical research and theory relating the brain and cognition. Emphasizes selected areas i.e., perception, attention, memory, language, and thinking.

6346. EVOLUTIONARY PSYCHOLOGY (3-0). Evolutionary processes influence behavior and thinking of humans and nonhuman species. Sociosexual behavior, aggression, cognition, and information processing from an evolutionary perspective will be among the topics covered.

6347. ENVIRONMENTAL PSYCHOLOGY (3-0). Survey of the current literature on the impact of various features of the physical environment on human behavior. Topics covered include crowding, privacy, territoriality, personal space, noise, the natural environment, residential, educational and work environments, urban and community design, and pollution and resource management. Designed to be of interest to graduate students in architecture, urban affairs, environmental science and engineering, geology, sociology, as well as those in psychology.

6349. PSYCHOMETRIC THEORY (3-0). Introduction to test construction. Topics include reliability theory, test validation, and item analysis.

6355. MULTIVARIATE ANALYSIS (3-0). Application of general linear model to special cases such as factor analysis, multiple regression, and discriminant analysis. PSYC 5344 recommended.

6391. RESEARCH IN PSYCHOLOGY (3-0).

6399. DISSERTATION (3-0). Graded R/F. Prerequisite: approved dissertation proposal.

6699. DISSERTATION (6-0). Graded R/F. Prerequisite: approved dissertation proposal.

6999. DISSERTATION (9-0). Graded P/F/R. Prerequisite: approved dissertation proposal.

Program in Science Education

cos.uta.edu/MAIS/

Areas of Study and Degrees
Interdisciplinary Science
M.A.

Master's Degree Plan
Non-Thesis

Director
Greg Hale
206 Life Science
817.272.3807

Graduate Advisor
Greg Hale
206 Life Science
817.272.3807

Graduate Faculty
Professors
Neill, White, Wickham

Associate Professor
Epperson

Professor Emeritus
Reaser

Special Members
Hale, Kuban, Pfeiffer

Objective

The Master of Arts in Interdisciplinary Science program is designed to strengthen and update the knowledge and skills necessary to teach science at the elementary, middle school, or secondary level. The MAIS degree is intended to help prepare teachers who desire certification in science, teachers who may wish to expand their knowledge of specific science disciplines, or those who wish to update their knowledge in rapidly changing science disciplines. Traditional masters degrees focus on classes in a single science department and encourage mastery of material in a sub specialty within the discipline. A thesis involving scientific research in the area of specialization is usually encouraged. In contrast, the MAIS program allows students to explore two or three areas of interest, and the courses are designed to provide an overview of current knowledge in each field. Since this is not a research-oriented degree, no thesis is required.

The content of the required courses was developed to contain material consistent with TEKS standards and to provide as much replicable laboratory experience as possible. While these classes are drawn from the foundational classes in each discipline, they are designed to cover the areas in greater depth, deal with historical aspects of the topics not covered in undergraduate classes, and focus on teaching and laboratory methodologies.

Admission

Unconditional

Students applying for unconditional admission to the MAIS program must meet the general graduate school admission requirements as outlined in the graduate catalog and earn a combined score of 1000 on the Graduate Record Exam (GRE).

Admission as Special Student

Students may apply for admission to the MAIS program as a "special student." Special student admission will allow an individual to enroll for 9 credit hours of MAIS coursework. Upon completion of 9 credit hours, the student must apply for unconditional admission to the MAIS program and pay an additional $30 application fee. If the applicant has completed 9 credit hours of coursework with a 3.0 or higher, the completed coursework will substitute for the GRE examination.

Degree Requirements

The MAIS degree is a 36 credit hour, non-thesis degree. Beginning students are encouraged to enroll in Contemporary Science, SCIE 5301, and students completing the degree enroll in a Capstone Science Seminar, SCIE 5302. These two courses constitute the 6 credit hour science core.

Students can select two or three areas of concentration from biology, chemistry, geology, mathematics, and physics. If the student chooses two concentration areas, each concentration will consist of four 3 credit hour courses for a total of 12 credit hours each. The remaining six credit hours may be taken as unrestricted science and math electives.If the student chooses three concentration areas, each concentration will consist of three 3 credit hour courses for a total of 9 credit hours each. The remaining three credit hours may be taken as unrestricted science or math electives.

Students must file a degree plan approved by the graduate advisor two long semesters prior to graduation.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Science (SCIE)

5192. SELECTED TOPICS IN SCIENCE (1-0). Topics in science not treated in the regular curriculum. Topic, format, and prerequisites to be determined by the instructor. May be repeated for credit as different topics are offered

5292. SELECTED TOPICS IN SCIENCE (2-0). Topics in science not treated in the regular curriculum. Topic, format, and prerequisites to be determined by the instructor. May be repeated for credit as different topics are offered.

5301. CONTEMPORARY SCIENCE (3-0). This class will review modern topical areas in contemporary science from a broadly multidisciplinary view. Readings from popular and scientific journals will be combined with lectures from different disciplines, to review the newest science innovations. Materials presented will familiarize students with current research, major breakthroughs in various fields, and the foundational science behind the discoveries. Topics covered should enrich K-12 science curricula and help teachers to address student questions about breaking science news. This class is intended for M.A. in Science majors, and may not be taken for credit for the M.S. or Ph.D. degrees in the College of Science.

5302. CAPSTONE SCIENCE SEMINAR (3-0). The Capstone Science Seminar is an intensive research and discussion class that will focus on new studies in science education and practice. Students in the M.A. in Science program should take this class in the last semester of study. This class will include a research project relevant to science education, and formal presentation of the research. This class is intended for M.A. in Science majors, and may not be taken for credit for the M.S. or Ph.D. degrees in the College of Science

5303. TEACHING AND LEARNING: SCIENTIFIC INQUIRY (3-0). Scientific inquiry refers to the diverse ways in which scientists study the natural world and propose explanations based on the evidence derived from their work. This course explores inquiry as it refers to the activities of students in which they develop knowledge and understanding of scientific ideas, as well as an understanding of how scientists study the natural world.

5304. SPECIAL TOPICS IN SCIENCE I (3-0). Seminar on significant research in science. Topics are selected with the assistance of the instructor and may include both pure and applied science

5305. SPECIAL TOPICS IN SCIENCE II (3-0). Seminar on significant research in science. Topics are selected with the assistance of the instructor may include both pure and applied science

5307. INTEGRATED PHYSICS AND CHEMISTRY: CHEMISTRY (3-0). This integrated study of physics and chemistry fundamental chemical principles including atomic structure, chemical bonding, the periodic table, nomenclature, kinetic theory, gas laws, chemical equations, and solutions.

5308. INTEGRATED PHYSICS AND CHEMISTRY: PHYSICS (3-0). This integrated study of physics and chemistry includes force and motion, waves and thermodynamics, energy transformations, quantum physics, and atomic structure.

5321. MECHANICS, HEAT, AND WAVE MOTION (3-0). This course is intended for students who wish to achieve a higher level of knowledge and effectiveness in the teaching of fundamental physics. Topics include: 1) Newton's laws of motion, gravitation, and planetary motion; 2) the basic laws of thermal and statistical physics; 3) oscillatory motion including waved and sound. Replicable experiments will be demonstrated throughout the course. This class is intended for M.A. in Interdisciplinary Science majors, and may not be taken for credit for M.S. or Ph.D. degrees in the College of Science. Prerequisite: Trigonometry.

5322. ELECTRICITY, MAGNETISM, CIRCUITS, AND OPTICS (3-0). This course is intended for students who wish to achieve a higher level of knowledge and effectiveness in the teaching of fundamental physics. Topics include: 1) Static changes, current flows, electric and magnetic fields; 2) simple DC/AC electrical circuits including examples from household circuit and practical electronic devices; 3) light and optics including examples such as camera, microscopes and telescopes. Replicable experiments will be demonstrated throughout the course. This class is intended for M.A. in Interdisciplinary Science majors, and may not be taken for credit for M.S. or Ph.D. degrees in the College of Science. Prerequisite: SCIE 5321.

5323. MODERN PHYSICS (3-0). This course is intended for students who wish to achieve a higher level of knowledge and effectiveness in the teaching of fundamental physics. Topics include: 1) introduction to special relativity and quantum theory; 2) light and radiation; 3) applications to modern electronic devices; 4) nuclear particle physics. This class is intended for M.A. in Interdisciplinary Science majors, and may not be taken for credit for M.S. or Ph.D. degrees in the College of Science. Prerequisite: SCIE 5321, SCIE 5322.

5329. LABORATORY TECHNIQUES IN PHYSICS (2-2). This course is intended for students who wish to achieve a higher level of knowledge and effectiveness in the teaching of fundamental physics. Experiments demonstrating various topics are covered. Experiments include gravitational acceleration heat flow, harmonic motion, sound, electric, magnetic fields, electric circuits, optic, x-rays and nuclear radiation. This class is intended for M.A. in Interdisciplinary Science majors and may not be taken for credit for M.S. or Ph.D. degrees in the College of Science. Prerequisite: SCIE 5321, SCIE 5322.

5330. EARTH SYSTEMS, PART I (3-0). A review of Earth materials and their chemistry. Earth structure and geologic time, followed by a detailed discussion of the plate tectonic system, the hydrologic system, and their interaction in weathering and erosion, sedimentation, and landscape development. Laboratory demonstrations will include identification of earth materials, estimating plate motions, location of earthquake epicenters, flood frequency, and groundwater

discharge. These classes are intended for M.A. in Interdisciplinary Science majors and may not be taken for credit for the M.S. or Ph.D. degrees in Geology or any other College of Science discipline.

5331. EARTH SYSTEMS, PART II (3-0). A detailed discussion of the atmosphere system, oceanic systems, biologic systems, and their history. A summary discussion of the interaction of Earth Systems for an understanding of processes that have formed and continue to form the Planet Earth. Laboratory demonstrations will include weather forecasting, ocean currents, sea level change, and fossil identification. This class is intended for M.A. in Interdisciplinary Science majors, and may not be taken for credit for the M.S. or Ph.D. degrees in Geology or any other College of Science discipline. Prerequisite: SCIE 5330 and admission into the M.A. in Interdisciplinary Science program.

5332. EARTH RESOURCES AND THE ENVIRONMENT (3-0). A detailed discussion of resources that support life: atmosphere, water, soil, minerals and materials, and energy; the use of those resources and the effect on the environment and global change; and the relation between population, resource distribution and availability, and environmental pollution. These classes are intended for M.A. in Interdisciplinary Science majors, and may not be taken for credit for the M.S. or Ph.D. degrees in Geology or any other College of Science discipline. Prerequisite: SCIE 5330, SCIE 5331, and admission into the M.A. in Interdisciplinary Science Program.

5335. LABORATORY METHODS AND TECHNIQUES (2-2). Methods and techniques used to identify minerals, rocks and fossils; maps and mapping of geological data; recognition of landslides; flood frequency and erosion processes of river and streams; location of earthquakes. These classes are intended for M.A. in Interdisciplinary Science majors, and may not be taken for credit for the M.S. or Ph.D. degrees in Geology or any other College of Science discipline. Prerequisite: SCIE 5330, SCIE 5331 and admission into the M.A. in Interdisciplinary Science Program.

5355. PRINCIPLES OF CHEMISTRY (3-0). The fundamentals of atomic structure, chemical bonding, the periodic table, nomenclature, gas laws, chemical equations, and solutions. The course will be supplemented with laboratory demonstrations devoted to chemical problem- solving, library and Internet resources, chemical ethics, etc. This course is intended for M.A. in Interdisciplinary Science majors, and may not be taken for credit for the M.S. or Ph.D. degrees in Chemistry or any other College of Science discipline.

5356. PRINCIPLES OF CHEMISTRY II (3-0). Study of advanced atomic structure and bonding concepts, acid-base theory, kinetics and equilibria, thermodynamics, electrochemistry, and the chemistry of some elements. The course will be supplemented with laboratory demonstrations devoted to chemical problem solving, library and internet resources, chemical ethics etc. This course is intended for M.A. in Interdisciplinary Science majors, and may not be taken for credit for M.S. or Ph.D. degrees in Chemistry or any other College of Science discipline. Prerequisite: SCIE 5355.

5357. INTRODUCTORY ORGANIC AND BIOCHEMISTRY (3-0). Survey of organic and biochemistry with emphasis on application to the human body. Organic functional groups and nomenclature, organic reactions, carbohydrates, lipids, proteins, enzymes, metabolism, and nucleic acids. This course is intended for M.A. in Interdisciplinary Science majors, and may not be taken for credit for M.S. or Ph.D. degrees in Chemistry or any other College of Science discipline. Prerequisite: SCIE 5355, SCIE 5356.

5358. LABORATORY PROBLEMS IN CHEMISTRY (2-2). Experiments related to fundamental principles covered in SCIE (formerly CHEM) 5355 and 5356. Volumetric and gravimetric determinations and qualitative analysis. This course is intended for M.A. in Interdisciplinary Science majors, and may not be taken for credit for the M.S. or Ph.D. degrees in Chemistry or any other College of Science discipline. Prerequisite: SCIE 5355, SCIE 5356.

5371. CELL AND MOLECULAR BIOLOGY (3-0). The course focuses on the chemical and molecular basis of life, including metabolism, cell structure and function and genetics. This class is intended for M.A. in Science majors, and may not be taken for credit for the M.S. or Ph.D. degrees in Biology or any other College of Science discipline.

5372. STRUCTURE AND FUNCTION OF ORGANISMS (3-0). The study of structure and function of plants and animals. Topics to be covered include structure at the level of the cell, tissue, organ and individual, growth, transport/circulation/gas exchange, nutrition, reproduction, development, endocrinology, and animal neural regulation. This class is intended for M.A. in Interdisciplinary Science majors, and may not be taken for credit for the M.S. or Ph.D. degrees in Biology or any other College of Science discipline. Prerequisite: SCIE 5371.

5373. EVOLUTION, ECOLOGY, AND BIODIVERSITY (3-0). Reviews three significant aspects of organismal biology and presents current hypotheses concerning the origin and diversification of life on Earth. The ecological and behavioral interactions between organisms and their biotic/abiotic environments are considered from an evolutionary perspective. This class is intended for M.A. in Interdisciplinary Science majors, and may not be taken for credit for the M.S. or Ph.D. degrees in Biology or any other College of Science discipline. Prerequisite: SCIE 5371, SCIE 5372.

5374. LABORATORY PROBLEMS IN BIOLOGY (2-2). Laboratory experiments related to fundamental principles covered in SCIE (formerly BIOL) 5371 and 5372. This course will utilize labs designed by Master Biology Teachers. These will be supplemented by labs published by the National Association of Biology Teachers, and various biology publishers. This class is intended for M.A. in Interdisciplinary Science majors, and may not be taken for credit for the M.S. or Ph.D. degrees in Biology or any other College of Science discipline. Prerequisite: SCIE 5371, SCIE 5372.

5380. MENTORED RESEARCH (6-0). Research under the direction of a College of Science faculty member. No more than six credit hours of SCIE 5380 may be taken for a letter grade. Prerequisite: written permission of the instructor.

5392. SELECTED TOPICS IN SCIENCE (3-0). Topics in science not treated in the regular curriculum. Topic, format, and prerequisites to be determined by the instructor. May be repeated for credit as different topics are offered.

The School of Social Work

Interim Dean: Philip Popple, Ph.D.
211 S. Cooper St., Social Work Complex • Box 19129 • 817.272.3944 • www.uta.edu/ssw

Mission and Philosophy

The mission of the UT Arlington School of Social Work is to advance knowledge, pursue excellence, provide leadership and service for enhancing well being, and to promote social and economic justice and cultural competence with diverse cultures.

History and Overview

The School of Social Work was established as the Graduate School of Social Work in 1967 by an act of the Texas Legislature. It became the School of Social Work in 1991 when the University's undergraduate social work program in the College of Liberal Arts merged with the school's graduate program.

More than 4,000 students have earned degrees at the school and many hold key management positions in public agencies and nonprofit organizations nationwide. Currently, the school has a diverse student body of approximately 600 M.S.S.W. graduate students and 60 Ph.D. students. Many of these students also hold full- or part-time positions in public agencies and nonprofit organizations.

One distinguishing feature of the school is its location in the heart of the Dallas-Fort Worth Metroplex, a rich urban laboratory of more than 150 cities with a population over 4.5 million. This complex social arena offers a wide array of opportunities for student projects, field placements and employment. Social work faculty, staff and students work on "real-life" social problems in cooperation with city governments, public agencies and nonprofit organizations.

Accreditation

The Council on Social Work Education has fully accredited the M.S.S.W. program. Accreditation is an important consideration for students because many professional social work positions require a degree from a CSWE accredited program. Academic credit for life experience and previous work experience is not given.

Scholastic Activity and Research Interests of the Faculty

School of Social Work faculty engage in research and community-service projects that enhance the effectiveness of the programs of public and nonprofit social-service organizations, that promote social justice and equality, and that extend the body of knowledge about social issues. Research topics span the broad range of social-work issues, including feminist theory, minority rights, child abuse, mental illness, ethics, aging, sexual abuse, community development, lesbian and gay persons, marital and family therapy, family violence, clinical assessment, stalking, constructivism, cognitive-behavioral treatment efficacy, adoption, siblings, foster care, African American fathers, substance abuse, social policy, and evaluations of state and federal child-welfare and community-service programs.

Programs

The School of Social Work currently offers two graduate programs of study: the Master of Science in Social Work (M.S.S.W.) and the Ph.D. The Ph.D. program offers two options: the Ph.D. in Social Work or a specialty in comparative social policy, in collaboration with La Universidad Autonoma de Nuevo Leon, that is taught in Texas and Mexico and requires fluency in English and Spanish. Degrees are awarded from both universities.

The school offers distance education M.S.S.W. programs in cooperation with other universities across the state. More than 400 students have graduated from such programs. Courses are also offered via the Internet and telecommunication for local students and those in distance education programs.

The school also offers training, research and service opportunities to faculty and students through its centers and other programs.

The Judith Granger Birmingham Center for Child Welfare provides support and graduate training to current and potential child-welfare workers and supports faculty and student research on child-welfare issues.

The Community Services Center is an instructional facility that provides a university-community partnership addressing community issues. The partnership enables university students, faculty and neighborhood organizations to work together to tackle complex socioeconomic issues facing the neighborhoods that surround them, such as poverty, domestic violence, homelessness and community revitalization. The purpose of the center is twofold: to provide professional training for graduate students and to provide professional services to the community. Community development interns conduct needs assessments, write grant proposals, design new programs, conduct evaluations, perform research and organize action groups. Community clinic interns provide affordable counseling for children, adolescents and families. Counseling services include individual counseling, marriage counseling, premarital counseling, family therapy, group counseling, anger control therapy, and social skills training. The community clinic also provides graduate interns an opportunity to conduct research programs in the area of counseling.

The Center for Research, Evaluation and Technology involves students and faculty in program evaluations for local social service agencies and in the development of new and innovative ways to support human services practice.

The Professional Development Program provides continuing education seminars for social work practitioners and other human services professionals. The seminars provide the continuing education units necessary for license renewals.

The school hosts an annual conference for students, alumni and community professionals.

Social Work

www.uta.edu/ssw

Area of Study and Degrees
Social Work
M.S.S.W., Ph.D.

Master's Degree Plans
Thesis and Non-Thesis

Dean
Santos H. Hernández
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Associate Dean
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M.S.S.W. Graduate Advisor
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Director of Admissions
Darlene Santee
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Graduate Faculty
Professors
Black, Duehn, Elliott, Granvold, Hegar, Hoefer, Hunter, Jordan, Pillai, Popple, Scannapieco, Schoech, Watts

Associate Professors
Barrett, Cobb, Lehmann, Rycraft, Woody, Yu

Assistant Professors
Basham, Kang, Mitschke, Moon, Page, Praetorius, Smith-Osborne, Spence

Master of Science in Social Work

M.S.S.W. Goals and Curriculum Objectives

M.S.S.W. Program Goals

Goal 1: The M.S.S.W. Program prepares students to practice effectively and ethically with the full range of social systems, emphasizing evidence-informed practice, a strengths approach, diversity, social justice, empowerment, and a critical thinking perspective.

Goal 2: The M.S.S.W. Program prepares students who understand the global and organizational contexts of social work practice and who are prepared to assume the responsibility for leadership positions, as well as engaging in life long learning.

Goal 3: The M.S.S.W. Program prepares students, by valuing social work history and the integration of social work knowledge, to understand professional social work and to be prepared for advanced level concentration in either:

- Concentration 1: Direct Practice with a specialization in (1) Child and Family Services, (2) Mental Health Services, (3) Health and Aging Services (in development), or in
- Concentration 2: Community and Administrative Practice.

M.S.S.W. Foundation Objectives

- Apply critical thinking skills within the context of professional social work practice.
- Understand the value base of the profession and its ethical standards and principles, and practice accordingly.
- Practice without discrimination and with respect, knowledge, and skills related to clients' age, class, color, culture, disability, ethnicity, family structure, gender, marital status, national origin, race, religion, sex, and sexual orientation.
- Understand the forms and mechanisms of oppression and discrimination and apply strategies of advocacy and social change that advance social and economic justice.
- Understand and interpret the history of the social work profession and its contemporary structures and issues.
- Apply the knowledge and skills of generalist social work practice with systems of all sizes.
- Use theoretical frameworks supported by empirical evidence to understand individual development and behavior across the life span and the interactions among individuals and between individuals and families, groups, organizations, and communities.
- Analyze, formulate, and influence social policies.
- Evaluate research studies, apply research findings to practice, and evaluate their own practice interventions.
- Use communication skills differentially across client populations, colleagues, and communities.
- Use supervision and consultation appropriate to social work practice.
- Function within the structure of organizations and service delivery systems and seek necessary organizational change.

Application and Admission Requirements

Students are admitted to the program for Fall, Spring, and Summer Semesters. Advanced Standing students only are admitted for Summer. Completed applications must be received no later than March 15, for Summer and Fall Semesters, and October 31, for Spring Semester.

Please note that the School of Social Work's deadline for application is different from the published deadlines of the Graduate School.

Admission Criteria for the Master's Program

- A bachelor's degree with a liberal arts perspective from an accredited college or university.
- Undergraduate GPA must be equal to or greater than 3.0 in the last 60 hours as calculated by the Graduate School or GRE score that evidences an ability to do satisfactory graduate work.
- Three letters of reference indicating professional or academic promise.
- Personal statement providing evidence of professional or academic goals consistent with the Social Work Program.
- Personal qualifications considered essential to the successful practice of social work including leadership ability, personal maturity, motivation for a human service profession and experience in social work. A personal interview may be required.
- Applicants to the school whose native language is not English must take, in addition to the Test of English as a Foreign Language, the Test of Spoken English.

Unconditional M.S.S.W. Admission: An applicant is admitted unconditionally when all documentation relating to admissions criteria is received and performance on a majority of the criteria is acceptable.

Probationary Admission: Candidates with less than a 3.0 GPA in the last 60 hours of undergraduate program as calculated by the Graduate School and GRE scores do not indicate ability to do satisfactory graduate work may be admitted on probation if other admission criteria are satisfactory and indicate academic potential.

Provisional Admission: An applicant unable to supply all required documentation prior to the admission decision deadline but who otherwise appears to meet admission requirements may be granted provisional admission.

Denial of Admission: Candidates may be denied admission if they have less than satisfactory performance on a majority of the admissions criteria.

Deferred Admission: A deferred decision may be granted when a file is incomplete or when a denied decision is not appropriate.

Neither probationary nor provisional admission will be granted to an applicant with less than a 3.0 GPA on the last two years of a bachelor's degree (approximately 60 hours) when the required GRE score is lacking.

Financial Aid

Scholarships are awarded annually and administered by the School of Social Work. Link to scholarship info: **http://www.uta.edu/ssw/scholarships/.**

A limited number of traineeships are available through Child Protective Services.

Graduate Fellowships

Candidates for fellowship awards must have a GPA of 3.0 in their last 60 undergraduate credit hours and in any graduate credit hours, and must be enrolled in a minimum of 6 hours in both long semesters to retain their fellowships.

Degree Requirements

The program leading to the degree of Master of Science in Social Work covers a minimum of four semesters for full-time students and requires the completion of 64 semester hours of graduate work including class and field instruction, as well as thesis or integrative seminar.

In addition to the requirements of the Graduate School, each graduate student in the social work program must (1) maintain at least a B (3.0) overall GPA in all coursework; (2) demonstrate suitability for professional social work practice; and, (3) demonstrate knowledge of and adherence to the Code of Ethics of the National Association of Social Workers and if licensed in Texas the Code of Ethics as currently published by the Texas Council for Social Work Examiners.

At such time as questions are raised by Social Work faculty or field instructors regarding a student's violation of #2 or #3 of the above requirements, the student will be notified and will be provided the opportunity to respond to the Academic and Professional Standards Committee. The committee will review the student's performance and make a recommendation concerning the student's eligibility to continue in the program. Appeal of a recommendation may be made to the Dean of the School of Social Work.

Advanced Standing

An applicant meeting all regular admissions requirements who has graduated from an accredited undergraduate program in social work may request advanced standing status in the graduate program. Advanced standing is not granted to students admitted on probation.

Advanced standing students may receive credit hour waivers for some undergraduate social work courses which are considered equivalent to the first and second semester courses, provided the student's grades in those courses are B or better. Students may receive course waivers for more than 20 hours, but only 20 hours may be applied to the 64-hour M.S.S.W. degree.

Students requesting advanced standing status who completed their B.S.W. degrees more than six years prior to the semester in which they propose to begin their graduate studies must provide a documented summary of their work as a social worker. Students who have completed their B.S.W. degrees within six years of their planned start of studies are not required to submit these materials. Advanced standing will be granted on a case-by-case basis contingent upon evaluation of transcripts and any other required supporting information.

Dual Degree Programs

Students in social work may participate in one of five dual degree programs whereby they can earn a Master of Science in Social Work and 1) a Master of City and Regional Planning, 2) a Master of Public Administration, 3) a Master of Arts in Urban Affairs, 4) a Master of Arts in Criminology and Criminal Justice, or 5) a Master of Arts in Sociology. By participating in a dual degree program, students can apply some semester hours jointly to meet the requirements of both degrees, thus reducing the total number of hours which would be required to earn both degrees separately. The number of hours which may be jointly applied ranges from 6 to 18 hours, subject to the approval of Graduate Advisors from both programs.

To participate in the dual degree program, students must make separate application to each program and must submit a separate Program of Work for each degree. Those interested in a dual degree program should consult the appropriate Graduate Advisor(s) for further information on course requirements. See also information on Dual Degree Programs in the Advanced Degree Requirements section of this catalog.

Part-Time Students

Admission and degree requirements for part-time students are the same as those for full-time students. Likewise, part-time students must maintain the performance level required of full-time students.

Doctor of Philosophy in Social Work

Objectives

The program leading to the Doctor of Philosophy in Social Work is designed to prepare scholars to advance knowledge development and dissemination for the profession of social work. Upon completion of the Ph.D. Program students will display competency in theory and theory development; knowledge and skills in research methods and data analysis; theory, research, and policy as applied to a specialty practice area; understanding and commitment to the underlying values, ethics, and social and economic justice perspectives in the scientific inquiry in social work; and theory and research as applied to social work practice, policy, and social work education. Graduates of the program are expected to make a significant contribution to the profession of social work through their own continued research, teaching, scholarship and service.

A specialty in comparative social policy is offered in conjunction with the Universidad Autonoma De Nuevo Leon (UANL) Monterrey, Mexico. Students will complete their first year of doctoral courses at the UANL Graduate School of Social Work. Classes at UANL will be conducted in Spanish and taught by UANL faculty. Students will complete their second year at the UT Arlington School of Social Work. Classes will be taught in English by UT Arlington faculty.

Admission Criteria for the Ph.D. Program

To be admitted to the Doctor of Philosophy in Social Work program, an applicant must satisfy the general admission requirements of the Graduate School and his or her academic record must show preparation for advanced study in social work. The students accepted for admission are those whose academic achievements, previous experience, and aptitude for research and scholarship indicate the potential for achieving the objectives of the program. In addition, admission to the program requires:

- Master's degree in Social Work or related field. For applicants with a master's in a related field, a background in social and behavioral science and research methods is desirable.
- Undergraduate GPA of 3.0 minimum, in the last 60 hours as calculated by the Graduate School.
- Master's GPA of 3.4 minimum as calculated by the Graduate School.
- A Graduate Record Examination or EXADEP score that evidences an ability to do satisfactory graduate work if master's GPA is less than 3.4.
- Transcripts of all undergraduate and graduate work.
- Curriculum vita.
- Academic goals consistent with the Social Work Program.
- Professional writing sample.
- Three letters of recommendation indicating professional and academic potential.
- A score of 550 on the written TOEFL Examination or 213 on the computer version if an applicant's first language is not English.

Unconditional Ph.D. Admission: An applicant is admitted unconditionally when all documentation relating to admissions criteria is received and performance on the criteria is acceptable.

Probationary Ph.D. Admission: An applicant whose Master's GPA is below 3.4 or that scores GRE or the EXADEP do not indicate ability to do satisfactory graduate work may be admitted on probation when performance on the majority of the remaining criteria is acceptable.

Provisional Admission: An applicant unable to supply all required documentation prior to the admission decision deadline but that otherwise appears to meet admission requirements may be granted provisional admission.

Denial of Ph.D. Admission: Candidates may be denied admission if they have less than satisfactory performance on a majority of the admissions criteria.

Deferred Admission: A deferred decision may be granted when a file is incomplete or when a denied decision is not appropriate.

An application for admission, transcripts of previous academic work and Graduate Record Examination or EXADEP scores must be submitted to the Graduate School of the University. An additional separate application and supporting materials must be sent to the Graduate Advisor, Ph.D. in Social Work Program.

Degree Requirements

The program leading to the degree Doctor of Philosophy in Social Work covers nine semesters (three years) of full-time study and requires the completion of 54 semester hours of graduate work including coursework, comprehensive examinations and a dissertation. Students and their faculty supervisory committee together develop a plan of study geared to the students' interests. Included in this plan are a set of required and elective courses in which students pursue their specialized interests.

- 27 hours of required courses that include 18 hours of core coursework. The core coursework qualifying comprehensive examinations must be satisfactorily completed before progressing in the program.
- a minimum of six hours and maximum of nine hours Research Practicum.
- three or more hours of electives selected in consultation with the student's advisory committee.
- six hours electives selected from relevant graduate courses offered outside the School of Social Work.
- on completion of 42 hours of required or elective coursework, the specialty comprehensive examination is taken prior to application for candidacy and registration for dissertation.
- three hours of dissertation tutorial taken upon successful completion of core and specialty comprehensive examinations.
- nine hours of dissertation to be taken the semester in which the student plans to graduate.

Successful completion of the comprehensive examinations in both core and specialty areas of study advances the student to candidacy at which time he or she devotes time to the completion of the dissertation. The last step before the degree is awarded is the final examination, which is focused on the defense of the dissertation.

Doctoral students must demonstrate knowledge of and adherence to the Code of Ethics of the National Association of Social Workers and the Code of Ethics as currently published by the Texas State Board of Social Worker Examiners.

Curriculum: Master of Science in Social Work

The curriculum is organized around five curriculum areas: Direct Practice, Community and Administration Practice, Research, Policy, and Human Behavior and the Social Environment. Required and elective courses are offered in each curriculum area. Students must complete foundation (first year) required courses before taking advanced (second year) courses. In the advanced year, a specialty is selected in child/family, mental health, administration, community practice, and a combination of administration and community practice. First year courses have 5000 numbers; second year courses have 6000 numbers. Master's level students are also allowed to take doctoral level courses with permission of the instructor.

Social Work (SOCW)

5301. HUMAN BEHAVIOR AND THE SOCIAL ENVIRONMENT I (3-0). Exploration of behavioral and social science knowledge of human behavior and development through the life course. Examines major systems in society: individual, group, family, and community; and the diversity of ethnicity, race, class, sexual orientation, and culture.

5303. FOUNDATIONS OF SOCIAL POLICY AND SERVICES (3-0). Examines how social goals are met by social welfare institutions. Conceptual schemes are developed for analyzing the structure of social welfare institutions and evaluating social welfare sub-systems. The social work profession also is examined in the context of the evolution and function of the contemporary American social welfare system. Required of all first-year students.

5304. GENERALIST MICRO PRACTICE (3-0). This foundation level course introduces graduate students to both theory and methods for social work practice with individuals, families, and small groups. It emphasizes a generalist perspective, beginning interviewing and relationship skills, problem assessment, goal setting, and contracting. Special attention is given to the common roles assumed by social workers (e.g., facilitator, broker, advocate). Required of all except advanced standing students.

5306. GENERALIST MACRO PRACTICE (3-0). Examines generalist community and administrative practice roles, the perspectives of strengths, empowerment, evidence-based practice, and global practice along with the values of social justice, diversity, and participation. Specific attention is given to designing intervention programs that build on community capacities and address community needs. Required of all except advanced standing students.

5309. PROFESSIONAL FOUNDATIONS OF SOCIAL WORK (3-0). Gives students a broad perspective on the profession of social work including its history, mission, goals, values and ethics, educational and organizational structure, and legal regulations. Required of all except advanced standing students.

5310. MICRO AND MACRO PRACTICE FIELD SEMINAR (3-0). Integration of social work knowledge, theory, and skills learned in the classroom with practical application in social work setting. Prerequisite: SOCW 5301, 5304, 5306, 5309 and concurrent enrollment in SOCW 5551.

5317. HUMAN BEHAVIOR AND DIVERSE POPULATIONS (3-0). Introduction to theoretical, practical, and policy issues related to race, ethnicity, and women. Historical, political, and socioeconomic forces are examined that maintain racist and sexist values, attitudes, and behaviors in society and all levels of organizational behavior. The importance and contribution of globalization, social justice and diversity are explored.

5322. RESEARCH AND EVALUATION METHODS IN SOCIAL WORK I (3-0). This course is designed to provide students with the fundamental skills to understand, use, and conduct research to advance the knowledge base of the social work profession. The course addresses elements of quantitative and qualitative methods, research ethics, and approaches to data analysis, with particular attention to the role of research with populations at risk, social and economic justice, and cultural diversity.

5551. APPLIED SOCIAL WORK PRACTICE I (5-0).

6151. APPLIED SOCIAL WORK PRACTICE II (1-0).

6190. TUTORIAL (1-0). Arrangements may be made for a directed and supervised tutorial in a select area of special interest to the student.

6251. APPLIED SOCIAL WORK PRACTICE II (2-0).

6301. ADVOCACY AND SOCIAL POLICY (3-0). Politics are key to developing social policy. Students learn theory and skills to impact social and distributive justice at local, state and national levels. Examines the role of the social work profession in politics. This course may be chosen as a Policy, Administrative Practice, or Community Practice elective. Prerequisite: SOCW 5303. Corequisite: SOCW 5310 and SOCW 5551.

6303. POVERTY, INEQUALITY AND SOCIAL POLICY (3-0). This course examines the nature and extent of poverty and inequality in the United States, their causes and consequences, and the debate concerning the role of government in providing anti-poverty programs. Many points of view concerning social and distributive justice are presented, from the radical left to radical right. Prerequisite: SOCW 5303. Corequisites: SOCW 5310 and SOCW 5551.

6304. SOCIAL POLICY AND CHILD WELFARE (3-0). Examination of current policies, programs, and practices. Attention given to new perspectives on the delivery system and staffing in child welfare. Through analysis and research, students are provided knowledge for more effective practice in the field of child welfare. Prerequisite: SOCW 5303.

6305. INTEGRATIVE SEMINAR (3-0). Focuses on issues and aspects of practice of broad concern to the profession of social work. Faculty members serve as consultants and resource persons to seminar members. Required of all non-thesis students in their final semester of coursework. Grade of C or better must be earned in this seminar to pass. If this requirement is not met, the student must repeat the course. Milestone: all courses have been taken for the degree except those left in the last semester, including this course. If fall or spring, no more than 15 hours can be left; if summer, no more than 12 hours can be left.

6310. SEMINAR IN WOMEN'S ISSUES (3-0). Explores women's issues in human behavior theory, practice theory, and policy. The historical, political, and socioeconomic forces that maintain sexism are discussed. Environmental influences are examined in relation to social justice, social work values, knowledge, and skills. Prerequisite: SOCW 5301, SOCW 5317.

6311. SEMINAR IN DIRECT METHODS IN COUPLES COUNSELING (3-0). Examination of various psychological, social, and

cognitive-behavioral treatment approaches to problems in intimate coupling. Emphasis is placed on the assessment of the sources and patterns of dissatisfaction and conflict, the selection and ordering of treatment strategies, and application of treatment techniques consistent with determined goals. Prerequisite: SOCW 6325; SOCW 6326 or concurrent enrollment.

6312. GROUP DYNAMICS I AND SOCIAL WORK PRACTICE (3-0). Examines contemporary social-psychological concepts and small group research, with a view to testing their applicability to practice propositions and operational principles, in work with both task and personality satisfaction groups. Prerequisite: SOCW 6325; SOCW 6326 or concurrent enrollment; or SOCW 6336 or concurrent enrollment.

6314. ADVANCED ADMINISTRATIVE PRACTICE (3-0). Focuses on selected topics, issues, and skills for effective social work administration. Content includes leadership, worker motivation, resource development, interagency relations and managing conflict and diversity in a climate of scarce resources. Prerequisite: SOCW 6371 or concurrent enrollment.

6315. ADVANCED COMMUNITY PRACTICE (3-0). Focuses on topics, issues, and skills for mobilizing neighborhoods, communities, and client groups to solve collective human problems. Content includes the politics of empowerment, mobilizing coalitions, locating resources, and mediating conflict. Prerequisite: SOCW 6371 or concurrent enrollment.

6317. DIRECT PRACTICE IN HEALTH CARE (3-0). Explores central contribution of social work to comprehensive health care; social work interventions to assess and ameliorate the psychosocial effects of illness and disability are included along with emerging roles for social work in prevention and health maintenance.

6318. DIRECT PRACTICE WITH AGING (3-0). Course presents an overview of current issues in the care, treatment, and delivery of social services to the aging. Students learn practice procedures designed to equip them with the skills needed for effective social work practice and review major theories on aging. Prerequisite: SOCW 6325; SOCW 6326 or concurrent enrollment; or SOCW 6336 or concurrent enrollment.

6319. SOCIAL POLICY AND MENTAL HEALTH (3-0). Studies programs and policies in the field of mental health. An analytical model is employed in the process of examining critical issues in the mental health arena. Prerequisite: SOCW 5303.

6320. PERSONAL RELATIONSHIPS (3-0). Explores theoretical and empirical data on diverse personal relationships at the follow stages of relationship: initiation, maintenance, and termination. Identifies areas for intervention. Prerequisite: SOCW 5301 and 5317.

6323. PERSPECTIVES IN MENTAL HEALTH (3-0). Examines and analyzes theories of mental health and disorders, perspectives on the etiology and epidemiology of mental disorder and the societal response to problems in mental health of vulnerable and oppressed populations. Prerequisite: SOCW 5301, SOCW 5317.

6324. RESEARCH AND EVALUATION METHODS IN SOCIAL WORK II (3-0). In this course quantitative and qualitative research methods and commonly used statistical procedures and approaches are applied to the evaluation of social work practice interventions and the evaluation of human service programs. These research skills and knowledge are presented from the perspective of promoting diversity and social and economic justice in the evaluation of social work intervention and the delivery of human service programs. Prerequisite: SOCW 5322.

6325. ADVANCED MICRO PRACTICE (3-0). Builds on the generalist perspective and the basic familiarity with social work processes (such as problem identification, assessment, contracting, plan implementation, and outcome evaluation) in the context of (1) existing psychotherapeutic modalities, and (2) the particular client characteristics that lend themselves to specific change modalities. Required of all DP students. Prerequisite: SOCW 5304, SOCW 5310, and SOCW 5551.

6326. DIRECT PRACTICE WITH CHILDREN AND FAMILIES (3-0). Focuses on the characteristics, strengths, and service needs of children and their families. Addresses assessment and intervention skills to work effectively with a variety of child, parent(s), and family problems. Specific techniques considered include child therapy, play therapy, behavioral contracting, cognitive-behavioral interventions, and crisis intervention. Required of all DP students specializing in Children and Families. Prerequisite: SOCW 6325 or concurrent enrollment.

6328. SOCIAL POLICY RESEARCH AND ANALYSIS (3-0). Seminar examining methods for analyzing social policies and for assessing effects of policy. Students evaluate and apply different models for social policy analysis, including comparative models. Students work with social indicators and other data sources used in policy research. Prerequisite: acceptance into the Ph.D. program.

6329. SOCIAL WORK, LAW, AND THE FAMILY CODE (3-0). Overview of legal principles and procedures as they apply to social workers and their interaction with clients. Particular attention given to the broad area of family law. Areas of mental health law, children's rights, consumerism, malpractice, courtroom testimony, criminal law, estates, and community legal services covered. This course is an elective only; does not meet the requirements for a second year policy course. Prerequisite: SOCW 6325; SOCW 6326 or concurrent enrollment; or SOCW 6336 or concurrent enrollment. CAP students: SOCW 6371.

6330. CHILD DEVELOPMENT (3-0). Reviews and analyzes theoretical and empirical approaches to understand the development of children through adolescence; explores implications for practice and policy with children and adolescents. Prerequisite: SOCW 5301 and SOCW 5317.

6331. THEORIES OF FAMILY (3-0). Reviews a variety of theoretical approaches useful in understanding the family. Implications for practice at the policy, community, and interpersonal levels are discussed. Prerequisite: SOCW 5301 and 5317.

6332. ADULT DEVELOPMENT (3-0). Explores selected issues and analyzes theories related to early and middle adulthood. Issues pertinent to practice, such as the developmental change processes of diverse populations, are also examined. Prerequisite: SOCW 5301 and SOCW 5317.

6333. AGING IN AMERICAN SOCIETY (3-0). Explores the elderly population in American society. Includes discussion of social gerontology, a description of the aged in the United States and across cultures. Changes among the elderly such as health, finances and social roles are studied. Prerequisite: SOCW 5301 and 5317.

6334. WOMEN AND FAMILY POLICY (3-0). Policies affecting women and the family; interaction of women with other social institutions (family, economy, policy); the unique impact of policies upon families and women of color; cross cultural comparisons and political strategies; the role of the social work profession in this policy field. Prerequisite: SOCW 5303.

6336. DIRECT PRACTICE IN MENTAL HEALTH (3-0). Focuses on assessment and intervention with those evidencing acute and chronic mental health problems and disabilities. The course addresses the delivery of services to various populations (children, adolescents, and adults), service delivery systems (community mental health, managed

behavioral health care), and a wide range of problems. Topics include well-being, ethics, case management, treatment planning, managed care, DSM, PIE, and substance abuse. Required of all DP students specializing in Mental Health. Prerequisite: SOCW 6325.

6337. PSYCHODYNAMICS (3-0). Applies psychodynamic theory derived from Freud and ego psychologists to the life cycle. Draws implications for social work practice with diverse groups. Prerequisite: SOCW 5301 and SOCW 5317.

6338. SOCIAL SERVICES AND SOCIAL POLICY (3-0). Broad acquaintance with, and analysis of, the social services and their role within social welfare policy. A variety of social services examined as well as modes and methods of providing these services, degree of effectiveness of various services in adequately serving clients, service gaps or duplication, and related areas. Prerequisite: SOCW 5303.

6339. PROGRAM EVALUATION (3-0). Presumes basic research competence on part of student. Focus on sociopolitical aspects of program evaluation as a specialized use of scientific methods and community practice skills. Relationships between program evaluation and program planning or administration stressed. Prerequisite: SOCW 5322. CAP students: SOCW 6371 or concurrent enrollment.

6340. ADVANCED RESEARCH METHODS IN HUMAN SERVICES (3-0). Acquaints students at an advanced level with research methodology as it applies to the human services. Includes techniques and tools of research, problem conceptualization, measurement, research and instrument design and data collection methods. Prerequisite: acceptance into the Ph.D. program.

6341. ADVANCED STATISTICAL METHODS IN HUMAN SERVICES (3-0). Advanced statistical applications in the human services. Emphasis on multivariate statistical approaches including multiple regression analysis, logistic regression, structural model analysis using LISREL or EQS. Prerequisite: SOCW 6347.

6342. HUMAN BEHAVIOR IN MACRO ENVIRONMENTS (3-0). Applies theories of systems, conflict, power, and change to human behavior in larger social settings, including organizations, communities, and social movements. Considers connections among oppression, disorder, and movements for distributive justice in both national and global contexts. This course meets the advanced Human Behavior requirement for students pursuing the CAP (Community and Administrative Practice) concentration. Prerequisites: SOCW 5301 and 5317.

6343. VIOLENCE IN FAMILIES (3-0). Addresses two areas: Models for effective treatment of violence-prone families and creation of legal and social service systems for treatment. Students undertake field research and learn procedures for conducting their own anger abatement training programs. Prerequisite: SOCW 6325; SOCW 6326 or concurrent enrollment.

6344. TREATMENT OF CHILDREN AND ADOLESCENTS (3-0). Overview of the literature which describes physical, psychological, and cultural characteristics unique to childhood and adolescence. Attention then turned to treatment principles, and the specification of procedures for the amelioration of problems common to children and adolescents. Prerequisite: SOCW 6325; SOCW 6326 or concurrent enrollment; or SOCW 6336 or concurrent enrollment.

6345. HEALTH POLICY (3-0). Historical, current, and projected national and local health policies and roles of providers and consumers of health care examined; service demands, economic, access, and regulatory issues analyzed; relationships between governmental, voluntary, and commercial sectors studied; analytic frameworks for the understanding and development of policies developed. Prerequisite: SOCW 5303.

6346. TEACHING PRACTICUM (3-0). Introduces students to the academic role through teaching practice at graduate and/or undergraduate level supervised by a full-time faculty member. Prerequisite: SOCW 6328, 6340, 6348, 6373.

6347. INTERMEDIATE STATISTICS (3-0). Statistical applications for doctoral social work students. Emphasizes both parametric and non-parametric techniques, including t-tests, ANOVA, correlation and regression, chi-square, and other non-parametrics. Designed to provide a foundation for advanced multivariate statistical techniques. Prerequisite: acceptance into the Ph.D. program.

6348. SEMINAR IN QUALITATIVE RESEARCH METHODS (3-0). Explores a variety of qualitative approaches to knowledge building and research. Designed to prepare students to carry out research projects within their areas of interest. Content includes discussions of knowledge development, study designs, data collection, analysis, and report writing. Prerequisite: acceptance into the Ph.D. program.

6349. AGING AND SOCIAL POLICY (3-0). Social welfare policies and programs are examined in terms of the overall impact on the aged and society. Needs and gaps in services to the aged are evaluated, especially concerning minority and low-income aged. Current issues in aging policy are examined. Prerequisite: SOCW 5303.

6350. SEMINAR IN COGNITIVE-BEHAVIORAL INTERVENTION STRATEGIES (3-0). Explores the integration of cognitive-behavioral and constructivist intervention methods in the treatment of various problems and clinical populations. The theoretical bases of cognitivism, behaviorism, and constructivism are identified and current issues in cognitive-behavioral and in constructivist methods are addressed. Assessment and interventions taught in this course are drawn from evidence-based practice knowledge and informed practice wisdom. Client strengths and individual empowerment are emphasized in formulating assessment and intervention strategies. Prerequisite: SOCW 6325; SOCW 6326 or concurrent enrollment; or SOCW 6336 or concurrent enrollment.

6353. SEMINAR IN FAMILY THERAPY (3-0). Comparison of various approaches to working with the family as a total system; enhancement of cognitive understanding of similarities and differences in theory and goals of family treatment in many fields of practice; integration of strategies and techniques of each method into an individual style of therapy. Prerequisite: SOCW 6325; SOCW 6326 or concurrent enrollment; or SOCW 6336 or concurrent enrollment.

6354. SOCIALLY OPPRESSED GROUPS, SOCIAL EXCLUSION AND SOCIAL JUSTICE (3-0). Past and present policies are examined related to people with disabilities, substance abusers, lesbians and gay men, juvenile delinquents, women convicted of criminal offenses, sex offenders and others who for various reasons experience social exclusion, stigma and social control. Theoretical bases of societal reaction to these groups and the impact on social policy and social work practice is considered. Prerequisite: SOCW 5303.

6355. ADVANCED USE OF INFORMATION TECHNOLOGY IN HUMAN SERVICES (3-0). Provides the knowledge and skills to assess needs/capacities and develop technology-based solutions to individual, group, family, administrative and community problems in any culture. Covers information systems, decision support systems, multimedia, human services software and internet applications. Classes held in classroom and chat room and video classroom, see http://www2.uta.edu/cussn/courses/6355/. Prerequisite: DP (Direct Practice) students: SOCW 6325; SOCW 6326 or concurrent enrollment; or SOCW 6336 or concurrent enrollment. CAP (Community and Administrative Practice) students: SOCW 6371 or concurrent enrollment.

6356. SEMINAR IN PROGRAM AND PRACTICE EVALUATION (3-0). This course provides hands on opportunities to develop program and clinical evaluation plans for social work/welfare agencies. Educational principles and theoretical foundations are discussed as the actual plans are developed. Students work with agency decision makers and the instructor to generate a plan acceptable to the agency for implementation. Prerequisite: SOCW 6347.

6357. COMPARATIVE SOCIAL POLICY (3-0). This course introduces models and methods for comparative analysis of social policy. Particular attention is devoted to the extent of involvement in social policy and services on the part of the governmental, voluntary nonprofit, and for-profit sectors. Other topics include the nature of public/private sector relations, the assessment of social policy with regard to both outcome (e.g., adequacy, efficiency) and values (e.g., freedom and choice, equality and equity, fraternity or solidarity), and tools for comparative policy research. The course is open to M.S.S.W. and Ph.D. students for social policy or elective credit. In different semesters, readings and seminar sessions may emphasize comparisons involving different countries and different areas of social policy. Prerequisite: SOCW 5303.

6358. SOCIAL WORK SUPERVISION (3-0). Introduction to roles, functions, and contextual dimensions of social work supervision. Administrative and clinical perspectives are examined within the contextual framework of the social work supervisor as manager, mentor, mediator, and leader in human service organizations. Prerequisite: SOCW 6325; SOCW 6326 or concurrent enrollment; or SOCW 6336 or concurrent enrollment. CAP students: SOCW 6371 or concurrent enrollment.

6359. SOCIAL WORK IN SCHOOLS (3-0). The purpose of this course is to provide an overview of the various social work related theoretical perspectives, models, and programs for intervention with children and their families in the school setting. This includes skills in assessment, prevention, and intervention in providing services to "high risk" students, such as students in poverty and students with disabilities, and addressing issues such as teen parenting, drug and alcohol abuse, and conflict management in the school setting. Prerequisite: SOCW 6325; SOCW 6326 or concurrent enrollment.

6360. CLINICAL ASSESSMENT OF CHILD MALTREATMENT (3-0). Examines knowledge/technique in child physical/emotional/sexual abuse, physical/emotional neglect, and exploitation interventions. Includes interviewing, identification, legal issues, assessment/evaluation, case management, intervention, follow-up. Prerequisite: SOCW 6325; SOCW 6326 or concurrent enrollment.

6361. STRESS, CRISIS, AND COPING (3-0). The impact of specific crises on individuals and families will be examined. Typical crises will include life-threatening illness, trauma, physical and mental disability, and death. Assessment and evaluation of an individual's coping ability and appropriate strategies for social work interventions will be studied. Prerequisite: SOCW 6325; SOCW 6326 or concurrent enrollment; or SOCW 6336 or concurrent enrollment.

6363. BUDGETING AND FINANCIAL MANAGEMENT (3-0). Basic overview of financial management applied specifically to human service agencies; emphases on basic concepts and skill building in budgeting, and fund raising; accounting principles, financial statements, and computerized financial information systems also covered. Prerequisite: SOCW 6371 or concurrent enrollment.

6365. SEXUAL AND GENDER IDENTITIES (3-0). Reviews various life experiences, challenges and psychosocial ctheories affecting lesbian, gay, bisexual, and transgender persons. Identifies social work interventions. Prerequisite: SOCW 5301 and 5317.

6367. SEMINAR IN ADVANCED STATISTICAL APPLICATIONS (3-0). This seminar covers statistical analysis of experimental designs, the General Linear Model and other advanced statistics. The course focuses on applications of statistics using various data sets. Prerequisite: Knowledge of SPSS; SOCW 6341 and 6347.

6368. SEXUAL ABUSE OF CHILDREN: IDENTIFICATION, ASSESSMENT, CASE MANAGEMENT AND TREATMENT (3-0). Seminar focused on examination of current knowledge and intervention strategies related to child sexual abuse. Topics addressed include techniques of obtaining information, sexual assault assessment procedures, validation, case management, application of change methods, case monitoring and relapse prevention. Prerequisite: SOCW 6325; SOCW 6326 or concurrent enrollment.

6369. INTRODUCTION TO HUMAN SEXUALITY AND SOCIAL WORK PRACTICE (3-0). Overview of human sexuality as it relates to social work practice. Human sexuality considered from a bio-psychosocial perspective. Emphasis on viewing human sexuality as an interactive process of the total personality. Attention given to various psychological, social and behavioral educational/treatment approaches. Prerequisite: SOCW 6325; SOCW 6326 or concurrent enrollment; or SOCW 6336 or concurrent enrollment.

6370. TREATING PARENT-CHILD RELATIONSHIPS (3-0). Treatment strategies and evaluation methods and research findings relevant to the treatment of parent-child relationships; review of existing parent training literature and commercially available parenting programs. Prerequisite: SOCW 6325; SOCW 6326 or concurrent enrollment; or SOCW 6336 or concurrent enrollment.

6371. COMMUNITY AND ADMINISTRATIVE PRACTICE (3-0). Surveys theory and builds skills in roles associated specifically with community practice (e.g., community/locality development, social planning, social action) and administrative practice (e.g., supervision, administration, management and management systems). Students complete an advanced assignment in community and/or organizational assessment and program design. Required of all CAP (Community and Administrative Practice) students. Prerequisite: Advanced Standing Student or SOCW 5306, SOCW 5304, SOCW 5309, SOCW 5301, SOCW 5303, SOCW 5322, SOCW 5317, SOCW 5310, and SOCW 5551.

6373. SCIENCE AND ADVANCED SOCIAL WORK PRACTICE (3-0). Involves the study of the philosophy of science and an examination of the contributions and limitations of science in the shaping of social work practice; involves as well the identifications and considerations of other factors which have a systemic effect on the epistemology and technology of the profession. Prerequisite: acceptance into the Ph.D. program.

6380. TREATMENT OF ADDICTIVE BEHAVIORS (3-0). Surveys major treatment alternatives, showing addictive behavior patterns such as alcohol/drug abuse or eating disorders. Student conducts field research of 12-step programs, practices interventions, and studies inpatient and outpatient treatment methods with emphasis on relapse prevention. Prerequisite: SOCW 6325; SOCW 6326 or concurrent enrollment; or SOCW 6336 or concurrent enrollment.

6383. COMPUTER-SUPPORTED PRACTICE (3-0). Examines the data/information/knowledge basis of social work and the technology-based tools and techniques to support micro and macro practice. Tools examined include information systems, multimedia, performance support systems, and artificial intelligence systems. Covers technology applications for communities, management, worker support, and client self-help. Classes held in classroom and online using text chat and video classroom. Prerequisite: acceptance into the Ph.D. program.

6384. MANAGEMENT OF CHILDREN'S AGENCIES AND PROGRAMS (3-0). Prepares students for mid-management and administrative roles in public and private child-serving agencies and programs. Includes content about the legal context of child welfare practice. Emphasis is on the community context of practice and how agencies can adapt their work to the cultural milieu of clients and others in the environment. Prerequisite: SOCW 6371 or concurrent enrollment.

6385. SOCIAL WORK AND MANAGED CARE (3-0). Explores the history of managed care in health and social services, the underlying philosophy, and current trends and practice issues. Assesses the potential for conflict between social work values and managed care systems. Builds skills for administrative roles in managed care settings. Prerequisite: SOCW 6371 or concurrent enrollment.

6386. GRANT PROPOSAL DEVELOPMENT SEMINAR (3-0). Grant proposal development is a fundamental method of accessing funds and developing new programs in the social service arena. In this class, students will identify key funding opportunities in their fields of interest and will write a proposal using an actual federal application and a foundation funding announcement. The majority of the course will be devoted to the development of the skills and knowledge necessary to produce a competitive proposal. These include, but are not limited to: a) needs and capacities assessment, b) program development, c) strategic planning, d) budgeting, e) evaluation, and f) community collaboration. The prerequisite for this course is SOCW 6371 (or concurrent enrollment) or SOCW 6325; SOCW 6326 or concurrent enrollment; or SOCW 6336 or concurrent enrollment.

6387. CHILD AND YOUTH POLICY (3-0). The course centers on a critical examination of current and proposed social policies impacting "at-risk" children and youth. An analytical approach to address the wide arena of national, international, and state child and youth social policies that mandate child custody, health, education, economic supports, juvenile justice, and child protection services. Emphasis will be placed on the role of the social work practitioner in enhancing the well being of children and youth through social policy analysis, development, implementation, and reform. Prerequisite: SOCW 5303.

6390. TUTORIAL (3-0). Arrangements may be made for a directed and supervised tutorial in a select area of special interest to the student.

6392. SELECTED TOPICS IN SOCIAL WELFARE (3-0). Topics vary from semester to semester depending on the needs and interest of the students. Prerequisite: permission of instructor.

6393. THESIS RESEARCH (3-0). Initial research in the student's area of concentration, leading to thesis. Prerequisite for 6398. Prerequisite: permission of instructor.

6394. APPLIED RESEARCH PRACTICUM (3-0). Students engage in an active program of applied research under direct supervision of a faculty member.

6396. SOCIAL WORK EDUCATION: PRINCIPLES AND SKILLS (3-0). Considers a range of ideas in educational thought relevant to the formulation of an analytical appraisal of social work education and training. Educational methods and skills relevant to social work are addressed and practice opportunities offered. Prerequisite: acceptance into the Ph.D. program.

6397. WRITING FOR PUBLICATION (3-0). This course will explore the world of academic publishing. Students will provide peer reviews of manuscripts, prepare and critique their ideas and draft sections of a manuscript, and present a final manuscript and publication plan. The intent is to help the students increase their chance of publishing manuscripts as a Ph.D. student and as a new faculty member. Although nothing can substitute for having information and research relevant for the field, the art of writing for publication should not be underestimated. Journal publishing, like any other human service endeavor, is easier as you become proficient. Most academics become proficient at communicating their ideas and research through trial and error. However, one's chances of becoming published can be increased by learning from experts in the field. Prerequisite: acceptance into the Ph.D. program.

6398. THESIS (3-0). Requires an individual research project in the individual's area of concentration, with a minimum of six semester hours total needed for the project. Satisfactory completion requires approval of the instructor in charge, a supervising committee appointed by the Dean of Graduate Studies. Defense in a final oral examination is required. Prerequisite: permission of the instructor.

6399. DISSERTATION (3-0). Preparation and submission of a doctoral dissertation in an area in social work.

6451. APPLIED SOCIAL WORK PRACTICE II (4-0).

6452. APPLIED SOCIAL WORK PRACTICE III (4-0).

6694. APPLIED RESEARCH PRACTICUM (6-0). Students engage in an active program of applied research under direct supervision of a faculty member.

6698. THESIS (6-0). Requires an individual research project in the individual's area of concentration, with a minimum of six semester hours total needed for the project. Satisfactory completion requires approval of the instructor in charge, a supervising committee appointed by the Dean of Graduate Studies. Defense in a final oral examination is required.

6699. DISSERTATION (6-0). Preparation and submission of a doctoral dissertation in an area in social work.

6851. APPLIED SOCIAL WORK PRACTICE II (8-0).

6999. DISSERTATION (9-0). Preparation and submission of a doctoral dissertation in an area in social work.

Field Instruction

Field instruction is an essential component of professional education for social work practice. Its purpose is to provide adequate opportunity and support for the application of social work knowledge and skills gained by the student in the classroom and to acquaint students with the realities of practice in organizational settings.

Students are assigned to affiliated agencies where they are administratively responsible to an agency supervisor, the field instructor. A campus professor or a community-based social worker acts as liaison and consultant to the agency field instructor and to the student in regard to the educational experience, to insure that classroom and field curricula are integrated.

Students are assigned to two different agency- or campus-based placements for field instruction and complete a total of 13 credit hours and 900 clock hours. First year students must complete 400 clock hours of generalist practice in one agency during one semester. Students should have completed at least 12 credit hours before enrolling for the first field placement. Students must complete foundation courses in Direct Practice, CAP, HBSE, and Policy prior to applying for first year field. Direct Practice II and Administration and Planning II must be taken either prior to or during the first field placement.

Second year students normally complete field instruction in two consecutive semesters at the same agency for a total of 500 clock

hours in their method of concentration (250 clock hours each semester) and receive a total of 8 credit hours. Before enrolling for second year field instruction, a student must have completed all first year coursework and be taking a second year practice course with each semester of field instruction. Students may do second year field instruction in one semester (called a block placement) if approved by the Director of Field Instruction.

Field Placements cannot be provided totally at night and on weekends. Students must have flexibility in scheduling time for classes and field instruction. Students must meet the requirements of the field agency including but not limited to the days and times required for initial screening procedures, orientation, training, and supervision.

Students are permitted to do one of their field placements in an agency where they have been employed provided that the agency is affiliated with the School of Social Work for the provision of field instruction, that the agency has a qualified field instructor who is not the employment supervisor, and that the proposed educational experience is approved by the Director of Field Instruction. A proposal must be submitted to the Director of Field Instruction for review and approval.

Out of Dallas/Fort Worth Metroplex Field Placements

The school affiliates with social service agencies in the Dallas/Fort Worth Metroplex for provision of both first and second year field instruction. Occasionally, other field placements are arranged outside the Metroplex dependent upon the resources of the school and at the discretion of the Director of Field Instruction. Placements that are arranged outside of the Metroplex for the sole benefit and convenience of students will require that actual expenses for site visits and liaison visits be reimbursed by the student in accordance with the official travel reimbursement guidelines of the State of Texas.

Requirement for Liability Insurance

All social work students enrolling in field instruction courses will be assessed a fee in order to include them in the School's group professional liability insurance policy. Coverage is for $250,000 limit each claim and $500,000 limit aggregate.

The first field placement (SOCW 5551) is generalist. All students taking 5551 must concurrently enroll in Micro and Macro Practice Field Seminar (SOCW 5310).

The School of Urban and Public Affairs

Dean: Barbara Becker, Ph.D.
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Mission and Philosophy

The mission of the School of Urban and Public Affairs is to conduct basic and applied research into urban problems and public policy, to provide services in support of public and nonprofit agencies, and to educate and train students for public service careers.

History and Overview

SUPA was established in 1967 as the Institute of Urban Studies by an act of the Texas Legislature. The institute's mandate was to offer Texas city and county governments and other public agencies high-caliber, university-based research, training and other technical services. In 1990, after significant expansion of its staff and programs, the organization became the School of Urban and Public Affairs. The institute continues to operate as a vital part of the school.

SUPA is the state's only university-based center for applied research and service in urban affairs. It is called upon routinely to study and recommend solutions for problems confronting government agencies, nonprofit organizations and private industry.

During its more than 40 years of existence, SUPA has conducted hundreds of studies on such topics as transportation, housing, local economic development, public safety, corrections, education, human services, child care and regional governance. Its reports are included in the collections of virtually every major library in Texas and have been adopted as texts at many colleges and universities.

Urban officials view SUPA as a primary source of information and advice in such matters as computer applications in urban management, home rule charters, redistricting, inter-local contracting, economic development, personnel management, revenue administration, land appraisal, zoning and land-use issues. SUPA is active in training local government officials and in consulting on service projects for governmental agencies worldwide. Urban professionals rely on SUPA for consultation and guidance in accomplishing such goals as urban revitalization, pollution control, conservation, and facility planning and siting.

Though much of its research is done in response to specific requests by particular entities, SUPA makes the results available through its publications to others who are confronting similar situations.

SUPA uses the most advanced computers, data collection and analysis techniques in conducting research, and its more than 20 faculty and staff draw upon their rich and diverse educational and cultural backgrounds. One distinguishing feature of SUPA is its location in the heart of the Dallas-Fort Worth Metroplex, a rich urban laboratory of more than 200 cities with a total population of approximately 6 million. This complex urban arena offers a wide array of opportunities for student projects, internships and employment. SUPA faculty, staff and students work on "real-life" urban and public affairs projects in cooperation with city governments, public agencies and nonprofit organizations through the school's institutes and centers.

The School of Urban and Public Affairs has nearly 1000 students of who approximately 280 are graduate students. Members of its diverse student body hold full- or part-time positions in government, private or nonprofit organizations. More than 1000 former students have earned graduate degrees at SUPA and contribute to the public and non-public sectors through their research, planning and policy implementation.

Accreditation

The School of Urban and Public Affairs is one of only approximately 20 in the country having both its Master's of Public Administration and its Master's of City and Regional Planning programs fully accredited by their respective accrediting agencies.

The Master's of City and Regional Planning is officially recognized and accredited by the Planning Accreditation Board that accredits North American planning programs on the basis of a strict and extensive set of criteria rooted in planning knowledge, skills, and values. Students enrolled in accredited programs are eligible for certain national scholarships, and graduates of accredited programs may qualify for certification by the American Institute of Certified Planners after fewer years of experience than graduates of nonaccredited programs.

The Master's of Public Administration degree is accredited by the National Association of Schools of Public Affairs and Administration that requires public administration programs to meet strict standards for faculty qualifications, curriculum content, admissions and program requirements, student composition and services, budget and facilities. Accreditation enhances the program's national reputation and opens doors and provides opportunities for students applying for Texas-based scholarships and nationwide positions.

SUPA was ranked as one of the best programs in the nation by *U.S. News & World Report* in 2008.

Scholastic Activity and Research Interests of the Faculty

SUPA faculty are actively engaged in research and community service projects that benefit local jurisdictions, public and nonprofit agencies with expertise that is beyond the normal scope of their particular services and resources. Typical projects include revitalization studies for inner-city neighborhoods, development plans for central business districts, economic development strategies for municipalities, inter-local contracting studies, and assessments of service delivery alternatives in communities and school districts.

The broad range of faculty research interests primarily focuses on local issues and provides support for local officials and urban professionals, but it also includes basic research into urban problems and public policy that is published in national journals and used in university texts. Research topics include such urban affairs issues as ur-

ban theory, development, management, politics, social welfare policy, social service administration and minority relations; such planning issues as urban design, land use analysis, environmental planning, economic development, community service and development, focus group research and group facilitation; and such public administration issues as public management, intergovernmental relations, entrepreneurship in government, education and economic development.

Some of the most significant faculty accomplishments are publication of an in-depth study of privatization in public schools which was presented to then Texas Governor George Bush and the Texas State Board of Education; supervision of a study of the Civic Center District in Dallas that will probably affect the development and future profile of that area; supervision of a study of a neighborhood in Dallas for the Dallas Neighborhood Renaissance Partnership program to ensure that the residents get the improvements they want and need; publication of a collection of essays on economic development strategies appropriate for Texas urban settings; a grant from the Economic Development Administration for a university center; completion of a study for Habitat for Humanity to be used in the revitalization of a Fort Worth inner-city neighborhood; preparation of two sets of manuals for the training of trainers of elected officials in Third World countries for the United Nations; supervision of an APA award-winning student project to help a local community with the development of a central business corridor; assistance to the Fort Worth City Council in reaching consensus on annual budget deliberations; assistance in recent federal voting rights cases in Tennessee, Texas, Georgia and New Mexico; research on the effect of displacement by Hurricane Katrina on school children; and research to assess the desire of former New Orleans public housing residents to return to New Orleans.

Programs

Degree Programs

SUPA currently offers five programs of graduate-level study:

Master's of Arts in Urban Affairs
Master's of City and Regional Planning
Master's of Public Administration
Ph.D. in Urban and Public Administration
Ph.D. in Urban Planning and Public Policy

SUPA participates in dual-degree programs with the schools of Architecture, Nursing and Social Work. It cooperates with the colleges of Engineering and Science in an interdisciplinary program leading to master's and doctoral degrees in environmental science and engineering.

Certificate Programs

SUPA offers certificate programs (as listed below) designed to provide skills and proficiency in highly specialized areas. Students enrolled in graduate degree programs at UT Arlington as well as students not enrolled in graduate degree programs are eligible to apply for these certificate programs. Those desiring to enroll in a certificate program but who are not currently enrolled in a graduate program may do so by applying to UT Arlington as a non-degree seeking special student. Upon completion of all requirements, a certificate of completion is awarded by the University. Information on all certificate programs can be found below.

Certificate in Development Review
Certificate in Geographic Information Systems
Certificate in Law and Public Policy
Certificate in Public Budgeting and Financial Management
Certificate in Urban Journalism
Certificate in Urban Non-profit Management
Certified Public Management Program

Admissions Policies for School of Urban and Public Affairs

Application Requirements and Deadlines

Along with the Graduate School application requirements, a complete application includes:

- Official transcripts from the institution(s) at which the Bachelor's work (and Master's work for Ph.D. applicants) was attempted or completed; and
- Official test score reports for the Graduate Record Examination (GRE) and, for international applicants, the Test of English as a Foreign Language (TOEFL) issued by the Educational Testing Service (ETS); and
- Three Letters of Recommendation. For master's programs, letters should attest to the applicant's ability to do master's-level work and complete the program. Letters for master's programs should be from academic or employment sources. For doctoral programs, letters should attest to the applicant's ability to do doctoral-level work and complete dissertation. Letters for doctoral programs must be from references who hold a Ph.D. degree; and
- Personal statement by applicant of no more than 250 words. For master's programs, the personal statement should explain reasons for wanting to earn a master's degree in the particular area of study and discuss any relevant background and experience. For doctoral programs, the personal statement should outline research agenda and reasons for wanting to earn the doctoral degree.

Official transcripts and test scores must be sent directly to the Graduate School by the institution and ETS respectively. Letters of recommendation and personal statement can be sent directly to: Academic Programs Secretary, SUPA Box 19588, Arlington TX 76019. It is the applicant's responsibility to ensure all application materials are received by the relevant deadline. Incomplete applications or applications received after the deadline will be deferred.

Master's programs admit students to begin any semester (Fall, Spring and Summer). Application deadlines for the Master's programs are available from the Graduate School. Doctoral programs admit students to begin in Fall semester only. The application deadline for the doctoral programs is April 1 for the following Fall.

Admission and Fellowship Criteria

Section A: The factors considered in the admissions process are as follows

1. Basic Factors:
   a. For master's programs, the undergraduate Grade Point Average (GPA) based on the last 60 hours of coursework as calculated by the Graduate School. For the doctoral program, the GPA based on graduate coursework completed.
   b. The Graduate Records Examination (GRE) based on the verbal and quantitative scores.
2. Determinative Factors:
   a. Letters of Recommendation.
   b. Personal Statement by Applicant.
   c. For master's programs, undergraduate field of study in the social sciences or related fields. For doctoral programs, master's-level field of study.
3. Enhancing Factors:
   a. Community Service, especially volunteer service in disadvantaged areas and for disadvantaged people.
   b. Multilingual proficiency.
   c. First generation graduate student from family.
   d. Work experience and level of responsibility.
   e. Geographic diversity.

Programs in Urban Affairs, Public and Urban Administration, and Urban Planning and Public Policy

www.uta.edu/supa

Areas of Study and Degrees

Urban Affairs
M.A.

Public and Urban Administration
Ph.D.

Urban Planning and Public Policy
Ph.D.

Dean

Barbara Becker
512 University Hall
817.272.3071

Graduate Advisors

Urban Affairs (M.A.)
Edith Barrett
530 University Hall, 817.272.3285

Ph.D. in Public and Urban Administration
Rod Hissong
505 University Hall, 817.272.3350

Ph.D. in Urban Planning and Public Policy
Enid Arvidson
513 University Hall, 817.272.3349

Graduate Faculty

Professors
Anjomani, Barrett, Cole, Cornehls, Goldsteen, Wyman

Associate Professors
Arvidson, Hissong, Li, Rodriguez, Tees, Wegner

Assistant Professors
Casey, Grodach, Howard, Martinez-Cosio

Visiting Professor
Whelan

Assistant Instructor
Guignard

Professors Emeritus
Geisel, Taebel

Section B: Decisional Criteria for Admission to the Master's Programs

Level 1: Applicants with a GPA of 3.0 or above, a Verbal GRE score of at least 400, a Quantitative GRE score of at least 400, and combined Verbal and Quantitative score of at least 1,000 will be admitted unconditionally, except for international applicants who will also be required to have a score of 213 or higher on the TOEFL (550 or higher on the written TOEFL; 79 or higher on TOEFL iBT).

Level 2: Based on a majority of enhancing factors and all determinative factors, applicants will unconditionally be admitted with a GPA of 3.0 or above, and a Verbal GRE score of at least 400 and a Quantitative GRE score of at least 400, and combined Verbal and Quantitative score of 800-999.

Level 3: Based on a majority of enhancing and determinative factors, applicants may be admitted on probation with a GPA of less than 3.0, and/or a Verbal GRE score less than 400 or a Quantitative GRE score less than 400, and a combined Verbal and Quantitative GRE score of less than 1,000. The Graduate Advisor will set the probationary conditions.

Level 4: Applicants who do not meet the standards of Level 3 will be referred to the admissions committee for final adjudication. If admitted on probation, the committee will set probationary standards.

Section C: Decisional Criteria for Admission to Ph.D. Programs

Level 1: Applicants will be admitted unconditionally with a graduate GPA of 3.6, a Verbal GRE score of at least 500 and a Quantitative GRE score of at least 500, except for international applicants who will also be required to have a score of 213 or higher on the TOEFL (550 or higher on the written TOEFL; 79 or higher on TOEFL iBT).

Level 2: Applicants will be unconditionally admitted with a GPA above 3.7, only one of the Verbal or Quantitative scores greater than 500, and a combined GRE score of between 900 and 999.

Level 3: Applicants may be admitted with a GPA of less than 3.6, a Verbal GRE score of less than 500 and a Quantitative GRE score of less than 500 on probation, based on a majority of enhancing and determinative factors. The doctoral admissions committee will set the probationary conditions.

Level 4: Applicants who do not meet the standards of Level 3 will be referred to the doctoral admissions committee for final adjudication. If admitted on probation, the committee will set any probationary standards.

Section D: Other Types of Admission

1. Deferred: A deferred decision may be granted when a field is incomplete or when a denied decision is not appropriate.
2. Provisional: An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission.

Section E: Scholarship/Fellowship Criteria

1. Graduate students with a GPA of 3.0 or better who are enrolled in six hours or more are eligible to apply for competitive scholarships and fellowships.
2. Scholarships and fellowships will be awarded by considering all of the factors in Section A, above.

Master of Arts in Urban Affairs

The Master of Arts degree in Urban Affairs focuses on policy issues and problems related to life in urban communities. Urban issues are complex and require the understanding and skill of many disciplines.

For this reason, the M.A. in Urban Affairs program is multidisciplinary, requiring students to study urban sociology, economics, and politics, as well as other fields related to urban living and urban spaces.

Broad and intensive graduate education in urban affairs can introduce graduates to a variety of rewarding and profitable careers. With the increased urbanization of Texas and the nation, new career opportunities, many of them recent in origin, are becoming available. The M.A. in Urban Affairs program prepares students for public service, managerial and administrative positions in local and regional government, non-profit- and private-sector consulting, and for other professional positions in development, social planning and urban journalism.

By educating young men and women for urban affairs careers, the program seeks to help provide society with the "brain power" it needs to deal with increasingly complex and urgent urban problems.

Degree Requirements

The Master's of Arts degree in Urban Affairs seeks to provide students with an understanding of cities in five general and interrelated areas of knowledge:

1. Urban Common Courses (nine hours)
2. Urban Institutions (six hours)
3. Urban Issues (nine hours)
4. Professional Development (six-nine hours)
5. Research and Analysis (nine-twelve hours)

A total of 39 to 45 hours is required for completion of the program, depending on the prior academic degree of the student, and prior professional experience.

In the Research and Analysis field, all students are required to take either URPA 5343 or URPA 5345. Students then have the option of taking one of the following sequences:

a. URPA 5341, Professional Report Writing, and URPA 5396, Project Report;
b. URPA 5342, Strategies for Urban Research, and either URPA 5396, Project Report or URPA 5698, Thesis.
c. CIRP 5346, Qualitative Analysis, and either URPA 5396, Project Report or URPA 5698, Thesis

Professional Development Fields

Students can specialize in one of four professional development fields as described below. As an alternative, they can petition to substitute another professional field, such as urban policy, education policy, criminal justice, or social services. Students may also devise their own professional development field with the assistance of the graduate advisor.

Urban Management: The Urban Management field is designed for students interested in public service careers or other managerial or administrative staff positions, such as finance and personnel. Student selecting Urban Management must fulfill the requirements as specified above. Students pursuing the Urban Management professional field track with an interest in non-profit organizations may also elect to work

toward a Certificate in Non-profit Management (**http://www.uta.edu/supa/Academics/urban-nonprofit-management-certificate-program**).

Urban and Social Planning: The Urban and Social Planning field is designed for students interested in planning careers in non-profit and public agencies. Students selecting Urban and Social Planning must fulfill the requirements specified above.

Urban Journalism: The Urban Journalism field is designed for students who are interested in careers in the media with a specialization in urban and community affairs. Students selecting Urban Journalism must complete the course requirements specified above. In addition, students must take the Project Report sequence in the Research and Analysis field, but the course requirements are reduced from 12 to 9 hours because URPA 5341 is not required. Students are also required to take URPA 5391, Topics in Urban Policy; Urban Journalism. Students pursuing the Urban Journalism professional field track may also elect to work toward a Certificate in Urban Journalism (**http://www.uta.edu/supa/Academics/urban-journalism-certificate-program**).

Environmental Policy and Planning: The Environmental Policy and Planning Field is designed for students interested in careers in the public and private sectors which focus on environmental concerns. Students selecting Environmental Policy and Planning must complete the course requirements specified above. Courses in the professional field will be drawn from Civil Engineering, City and Regional Planning and other programs. (See appropriate departments for course listings.)

Dual Degree Program

Students in Urban Affairs may participate in a dual degree program whereby they can earn a Master of Arts in Urban Affairs and a Master of Science in Social Work or Masters in City and Regional Planning, or a Masters in Public Administration. By participating in a dual degree program, students can apply a number of semester hours jointly to meet the requirements of both degrees, thus reducing the total number of hours which would be required to earn both degrees separately. The number of hours which may be jointly applied ranges from nine to 18 hours, subject to the approval of Graduate Advisors from both programs. To participate in the dual degree program, students must make separate application to each program and must submit a separate Program of Work for each degree. Those interested in the dual degree program should consult the appropriate Graduate Advisor(s) for further information on course requirements. See also the statement on "Dual Degree Programs" in the general admission section of this catalog.

Certificate Programs

Certificate in Urban Journalism

The Certificate in Urban Journalism program provides journalists and others who communicate with the public an in-depth understanding of the urban community, including the dynamics, processes and problems of urban America, especially in Texas.

Journalism today faces a serious dilemma: speed versus analysis. Speed is, in many cases, the objective of the media. But, except for the most mundane events, it fails to educate the listener or reader. Universities are at the opposite end of the spectrum. Speed is generally unimportant, but analysis is essential. Yet the university's communication with the general public is limited. The Certificate in Urban Journalism program seeks to bridge the gap. In order for a democratic society to work, the public must not only have information, but perspective. Perspective does not mean opinion or ideology. Perspective places today's events in a comparative and historical context. This certificate program is a step in that direction.

Students are required to complete 15 hours, composed of the following courses: SUPA 5300: Foundations of Urban Planning and Sociology; SUPA 5301: Foundations of Urban Politics and Economics; SUPA 5302: Foundations of Urban Research and Analysis; URPA 5303: The Metroplex; and URPA 5391: Topics in Urban Policy: Urban Journalism.

Applicants should apply to UT Arlington as special students. Certificate students who decide later to pursue one of the graduate programs in SUPA may have the certificate coursework applied toward a graduate degree, with approval by the appropriate graduate advisor.

Certificate in Law and Public Policy

The Certificate in Law and Public Policy provides a basic grounding in the legal policy aspects of such areas as the environment, health, education, economics, social work, and urban and social policy.

Many fields of private and public service today are affected by the legal system and the maze of complex laws and regulations which govern the conduct of public agencies and private entities. An understanding of these legal dimensions and their impacts can be a valuable asset in the modern employment environment.

Additionally, students with an interest in entering law school can obtain a basic overview of the many dimensions of society affected by the law, and acquire a valuable head start in their pursuit of a law degree.

Students already enrolled in a graduate program at UT Arlington need only declare their intent to enroll in the Certificate Program by submitting the appropriate application form to the Law and Public Policy Graduate Advisor. Students who wish only to enroll in the Law and Public Policy program, but NOT in a graduate degree program may apply for admission to UT Arlington as a special student, or "non-degree seeking" student. An undergraduate degree and grade point average of 2.8 in the last 60 credit hours of baccalaureate studies are required.

Students must complete 15 credit hours, consisting of two required core courses and nine elective hours (3 courses) from an approved list with permission of the program advisor.

Core Courses (Required)

URPA 5325. Urban and Administrative Law
URPA 5363. Civil Rights and Urban Minorities

College of Business Administration

BA 5330. Legal Environment of Business
BA 5331. Law of International Business
BA 5324. Real Property Law
ECON 5305. Environmental Law and Policy
MANA 5327. Human Resource Law

Education

EDAD 5381. Political and Legal Aspects of Education

Political Science

POLS 5355. Topics in Public Laws and Jurisprudence

Nursing

NURS 5386. Health Law
NURS 5387. The Law of Healthcare Malpractice

Social Work

SOCW 6329. Social Work, Law, and the Family Code

Urban and Public Affairs

CIRP 5353. Environmental Law
CIRP 5316. Land Use Law

Ph.D. in Public and Urban Administration

The Ph.D. Program in Public and Urban Administration is based on a unique interdisciplinary approach in preparing students for a variety of academic, research and senior public management positions in educational institutions, public and non-profit organizations.

Students in the program are required to complete the core fields of study of urban administration and of urban public policy as well as a research support field.

For the purpose of developing academic support among Ph.D. students, new Ph.D. students are admitted only at the beginning of the fall semester. The deadline to apply for admission for the following fall semester is April 1.

Program

Core Fields: Students generally take 18 hours of coursework in each of urban administration and public policy. Appropriate courses in the urban administration field are listed below under "Urban Management" and also in the Public Administration section of this catalog under the heading of "Administrative Theory, Practices and Processes." Appropriate courses in the urban public policy field are listed below under "Urban Institutions" and under "Urban Issues." Courses from other programs, including social work, city and regional planning, criminal justice, education and social work may also be applied to the core fields, if appropriate.

Support Field: Students generally take 15 hours of coursework in the Research support field. Students complete a sequence of courses concerning theory and theory construction, evaluation research design, and quantitative and qualitative research methods. At least one course of the sequence is offered each regular semester to ensure the students make stead progress.

Dissertation: Students generally complete a minimum of 9 credit hours toward the completion of their dissertation.

Courses:

Urban Administration Courses (18 hours minimum)
Required:
URPA 6315 Theories of Public Administration
URPA 6320 Advanced Organization Theory
Choose at least four of the following:
URPA 5320 Organization Theory and Development
URPA 5323 Public Organizational Change
URPA 5324 Urban Public Finance
URPA 5325 Urban and Administrative Law
URPA 5326 Public Budgeting
URPA 5327 Comparative Administration and Development
URPA 5350 Principles of Public Administration
(Prerequisite for URPA 6315)
URPA 5351 Personnel and Human Resources in the Public Sector

Depending on the background of the student, other courses may be substituted for the above.

Urban Policy Courses (18 hours minimum)
Choose at least two of the following:
URPA 5304 The Urban Political System
URPA 5305 Theories of Urban Society
URPA 5306 The Urban Economy
Choose three or four of the following:
URPA 5307 Urban Geography
URPA 5308 Urban History
URPA 5309 Federalism and Intergovernmental Relations
URPA 5310 Urban Policy
URPA 5311 Social Policy Formation
URPA 5312 Economic Policy
URPA 5314 Health Policy
URPA 5315 Urban Education Policy
URPA 5317 Urban Environmental Policy
URPA 5318 Social Welfare Policy
URPA 5363 Civil Rights and Urban Minorities
URPA 5364 Institutional and Other Radical Economic Theories
CIRP 5313 Urban Growth Policies
CIRP 5315 Transportation Policies, Programs and History
CIRP 5342 Urban Environmental Policy
CIRP 5353 Housing Planning and Policy
CIRP 5364 Economic Base and Industrial Development Policy

Depending on the background of the student, other courses may be substituted for the above.

Research and Analysis (15 hours minimum)
Choose one of the following:
URPA 5342 Strategies for Urban Research or
CIRP 5317 Research and Forecasting Methods
Required:
URPA 5345 Evaluation Research
CIRP 5346 Qualitative Research Methods
URPA 6301 Theoretical Foundations of Urban Affairs
URPA 6346 Advanced Data Analysis

Dissertation (9 hours minimum)

Ph.D. in Urban Planning and Public Policy

The Ph.D. Program in Urban Planning and Public Policy (UPPP) integrates the academic disciplines of urban planning and public policy, providing students with a rich core of substantive and procedural knowledge concerning policy and planning. The Program combines theoretical inquiry and analysis with application, offering students diverse approaches to policy and planning issues. Faculty interests include economic, social, environmental, transportation, land use, international, and political specializations. Students are encouraged to pursue dissertation research using either or both quantitative and qualitative methodologies, and the Program offers extensive preparation in these modes of inquiry. The Program prepares doctoral students for careers in university teaching and research, and also for senior public or non-profit sector positions.

Students in the program are required to pursue two core fields of study and two support fields of study. One of the core fields of study is urban planning and the other is public policy. One support field of study is research and the other is determined through consultation with faculty advisors.

Ph.D. students are admitted to begin in the Fall semester only. The application deadline is April 1 for the following Fall.

Program

The purpose of coursework is to prepare students for both their doctoral exams as well as, upon successful completion of the exams, their dissertation.

Core fields: It is recommended that students take 18 hours of coursework in each of the two core fields of study. Appropriate courses in the urban planning core field are listed below under "Ur-

ban Planning Core Field Courses." Appropriate courses in the public policy core field are listed below under "Public Policy Core Field Courses." Courses from other programs, such as social work, political science, sociology, architecture, business, may be substituted for these core field courses if appropriate. Successful completion of two comprehensive exams, one in each core field, is required of all students before applying for doctoral candidacy.

Courses:

Urban Planning Core Field Courses (18 hours)
Required:
CIRP 5303 Planning History and Theory
CIRP 5310 Urban Structure and Planning
Choose one of the following:
CIRP 5304 Plan Implementation
CIRP 5316 Land Use Law
Choose one of the following:
CIRP 5305 Land Use Management and Development
CIRP 5345 Planning and Real Estate
Choose one of the following:
CIRP 5311 Elements of Urban Design
CIRP 5350 Environmental Planning
Choose one of the following:
CIRP 5306 Urban Redevelopment
CIRP 5322 Economic Development

Public Policy Core Field Courses (18 hours)
Choose two of the following:
URPA 5304 The Urban Political System
URPA 5305 Theories of Urban Society
URPA 5306 The Urban Economy
Choose two of the following:
URPA 5309 Intergovernmental Relations
URPA 5310 Urban Policy
URPA 5311 Social Policy Formation
URPA 5312 Economic Policy
URPA 5363 Civil Rights and Urban Minorities
CIRP 5347/URPA 5319 Urban Problems
Choose two of the following:
URPA 5364 Institutional and Other Radical Economic Theories
CIRP 5324/URPA 5313 Community Development
CIRP 5342/URPA 5317 Urban Environmental Policy
CIRP 5313 Urban Growth Policies
CIRP 5315 Transportation Policies, Programs and History
CIRP 5354 Housing Planning, Policy and Finance
CIRP 5364 Economic Base and Industrial Development Policy

Support Fields: It is recommended that students take 15 hours of coursework in the Research support field. The sequence of courses covers theory and theory construction, evaluation research design, and quantitative and qualitative research methods. At least one course of the sequence is offered each regular semester to ensure the students make steady progress. Successful completion of the Research proficiency examination is required of all students before applying for doctoral candidacy.

Students generally complete 9 hours of coursework in a specialized support field related to the overall objective of the program, with specific courses determined through consultation with faculty advisors.

Examinations (Applicable to both Ph.D. programs)

Diagnostic Examination: Each student will complete a diagnostic examination after completing 9 to 12 hours of coursework. The examination will evaluate the student's progress in the program, and, if the faculty recommends continuation, the tentative program of work will be established.

Research Proficiency Examination: All students are required to pass a proficiency examination in research.

Written Comprehensive Examinations: Students must successfully pass a written comprehensive examination in each of the core fields during or after the semester in which they complete coursework in the field. The examinations can be taken over a two-semester period.

Oral Examination: Students who successfully pass their written comprehensive examinations and proficiency examination, sit for an oral examination.

Dissertation: Students who pass their oral examination are elevated to candidacy for the Ph.D. and may register for the dissertation. The dissertation is the culmination of the Ph.D. program and represents a distinct contribution to the field of knowledge. A dissertation defense is required.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Urban Common Courses (SUPA)

5300. FOUNDATIONS OF URBAN PLANNING AND SOCIOLOGY (3-0). How urban communities develop as human settlements, their life cycles, expansion, and decay. Special consideration is given to social policy. Topics such as poverty, race, neighborhoods, and environment.

5301. FOUNDATIONS OF URBAN POLITICS AND ECONOMICS (3-0). Examines the major political and economic institutions and processes in urban communities and their effect on urban policy.

5302. FOUNDATIONS OF URBAN RESEARCH AND ANALYSIS (3-0). An introduction to research methodologies, both quantitative and qualitative, and statistical techniques useful in the analysis of urban trends, planning projects and administrative programs.

Urban and Public Affairs (URPA)

5303. THE METROPLEX: SURVEY OF URBAN AFFAIRS, PLANNING, ADMINISTRATION: (3-0). The Metroplex provides an ideal laboratory for study with more than 100 cities and other governmental units, thousands of neighborhoods and business enterprises, major concentration of minorities and dozens of ethnic groups. An in-depth orientation on urban dynamics utilizing senior faculty members, governmental and community leaders, and current research reports and studies.

5304. URBAN POLITICS (3-0). Examination of the city as a political system, including the impact of urbanization and fragmentation on policies; input dimensions, including voting patterns and interest group development; decision-making structures, especially types of community power structures and the impact of the reform movement on structural processes. Also offered as POLS 5305; credit will be granted only once.

5305. THEORIES OF URBAN SOCIETY (3-0). Several theoretical perspectives of the community and community organization examined. Special emphasis given to theories from human ecology, organization and stratification, and social welfare.

5306. THE URBAN ECONOMY (3-0). Internal dynamics of the growth and development of the urban system and its relation to the national economy. National and urban economic policy, urban growth and land use, market imperfections, urban financial issues, and the environmental implications of urban growth studied through lecture, game simulation and policy debates.

5307. URBAN GEOGRAPHY (3-0). Emphasizes real aspects associated with urban physical environments and social, behavioral and financial processes that shape these environments.

5308. URBAN HISTORY (3-0). Extensive reading primarily in the history of the urbanization and metropolitanization of the people of the United States. Historical methods as exemplified in the works of leading historians and analyzed; examples of the scholarship of selected historians and treatises on selected cities, regions, and urban institutions studied.

5309. INTERGOVERNMENTAL RELATIONS (3-0). Critical analysis of the implications of federalism, and the changing nature of intergovernmental relations on state and local management, administration, planning, and policy making.

5310. URBAN POLICY AND THE LAW (3-0). Critical analysis of federal government and selected state and local government policies and programs designed to influence the course of change and the future development of cities and urban areas. The role of "private" governments in affecting policy explored.

5311. SOCIAL POLICY FORMATION (3-0). Utilization of a sociological approach in the study of policy formation in such areas as aging, social planning, and community problem solving.

5312. ECONOMIC POLICY (3-0). Examines structure of the U.S. economic system and its impact on welfare of consumers, workers, and industry; public policy efforts to provide for management of critical economic variables are evaluated for effectiveness and equity as they impact different interest groups.

5313. COMMUNITY DEVELOPMENT (3-0). Focuses on current problems of community development and neighborhood revitalization. Housing, community assets, the roles of community development corporations and social capital in cities, and community economic development will be analyzed. Federal, state, and local policies, with grassroots initiatives evaluated for effectiveness on promoting alternatives for community building and organizing. Also offered as CIRP 5324; credit will be granted only once.

5314. HEALTH POLICY (3-0). Current health policy and programs, examination of historical development, economic and legal aspects, interest groups and health constituencies.

5315. URBAN EDUCATION POLICY (3-0). Examines current education policy and programs, including public school districts, charter schools, and vouchers; economic and political aspects; role of adult education programs in improving human capital.

5316. HUMAN SERVICES (3-0). Social welfare institutions: private and public; needs assessment, resource allocation, procedures, city/state/federal/private policy review; highlights of current system demands and changes. Offered as URPA 5316 and CIRP 5344; credit will be granted only once.

5317. ENVIRONMENTAL POLICY (3-0). Focuses on the physical environmental dimensions of urbanization including such factors as pollution, waste disposal, and land use; stresses the role of economic, social, and political institutions as these affect environmental quality of the city. Offered as CIRP 5342 and URPA 5317; credit will be granted only once.

5318. SOCIAL WELFARE POLICY (3-0). Examines recent welfare reform measures (federal, state, and local levels), the political issues behind them, and their influence on urban life. A central topic will be the impact of a changing society on social welfare policy needs, including analyses of labor force participation and family structure.

5319. URBAN PROBLEMS (3-0). Specific urban problems examined in depth, traced to their historical origins to see how they or similar problems have been dealt with in other times and places. Students will then propose possible solutions to the problems in their contemporary form. Offered as CIRP 5347 and URPA 5319.

5320. PUBLIC ORGANIZATION THEORY (3-0). Historical evolution of administrative theory including classical, sociological and social-psychological dimensions; decision-making theory; implications of public interest theory for public management; basic concepts of organization development and impact on public administration paradigms; new public administration; and future of public urban organization. Also offered as CRCJ 5309 and POLS 5303; credit will be granted only once.

5321. URBAN MANAGEMENT (3-0). Focuses through lectures, readings, and exercises on major administrative process: personnel and policy development and analysis; management styles and key contemporary management problems explored through presentations by prominent local practitioners.

5322. POLITICS, POLICY AND PUBLIC ADMINISTRATION (3-0). Development of theory of bureaucracy; bureaucracy as social issue; ethics and morality in public bureaucracy; mobilization of special interest support; power differentials in urban agencies; policy process in bureaucracy; new bureaucratic structures and processes for urban policy making.

5323. PUBLIC ORGANIZATIONAL CHANGE (3-0). Current theories and concepts of public organizational change with particular emphasis on organization development and action research; theoretical roots of contemporary change literature traced through readings and discussion of classical organization theory, public administration including New Public Administration decision making, public interest, phenomenology, learning theory and general systems. Prerequisite: basic organizational theory course or permission of instructor.

5324. URBAN PUBLIC FINANCE (3-0). Tax, revenue, and fiscal problems of cities and local governments in metropolitan areas; problems of matching costs and benefits in providing public services among different local governments; increasingly complex dimensions of intergovernmental fiscal relations and public budgeting systems. Offered as URPA 5342 and CIRP 5317; credit will be granted only once.

5325. ADMINISTRATIVE LAW (3-0). Examines scope and role of administrative regulation of and by governmental agencies; explores constitutional principles which limit administrative power and administrative law which governs classical areas of conflict between administrative agencies and their constituencies; rule-making, judicial review and informal regulatory processes of importance to public officials.

5326. PUBLIC BUDGETING (3-0). Rationale of public budgeting including legal, political, social, and administrative perspectives; history of budgeting techniques and such approaches as Management by Objectives, and Program and Mission Budgeting. Offered as CIRP 5328 and URPA 5326. Credit will be granted only once.

5327. COMPARATIVE ADMINISTRATION AND POLICY (3-0). Extensive, multidisciplinary exposure to concepts and models of administration in developed and modernizing countries; role of the military, bureaucracy and traditional elites in development; practices and concepts of strategies for effective change.

5328. SMALL CITY MANAGEMENT (3-0). This course will focus on problems peculiar to small cities, including administrative law; personnel, planning; public works, public safety; human services; budget and finance; public relations and parks and recreation.

5329. FINANCIAL MANAGEMENT IN THE PUBLIC AND NON-PROFIT SECTORS (3-0). Overview of the principles of finance as they apply to the public and non-profit sectors, financial reporting for state and local governments and non-profit organizations and evaluation.

5330. COMMUNITY AND NEIGHBORHOOD ORGANIZATION (3-0). Structure and processes in the analysis and development of community and neighborhood organizations; special emphasis given to poverty and minority communities and neighborhoods.

5331. LAND USE PLANNING AND THE LAW (3-0). Explores the law of land use in the context of the American legal, economic, and political systems. Examines leading court decisions and precedents for their background, content, and applicability to contemporary land use. Offered as CIRP 5316 and URPA 5331. Credit will be granted only once.

5332. CAPITAL BUDGETING (3-0). Examines governmental capital budgeting processes with a focus on apprehending the significance of capital improvement planning, public facility investment, and project evaluation to sound infrastructure financing and regional economic growth. Governments purchase or construct long-lasting physical assets or facilities financed mostly through borrowing. This course aims to understand the rationale for public capital budgeting and debt instruments used to finance capital investment in the political context of public budgeting in America.

5334. MANAGEMENT OF ECONOMIC DEVELOPMENT (3-0). This course focuses on the knowledge, organization, politics, issues, techniques and processes of local economic development. Emphasis is placed on contemporary issues and trends in the rich, dynamic laboratory of local economic development in Texas. Learning objectives include: 1) comprehension of basic techniques and issues such as strategic planning, leadership strategies, financial options and evaluation; 2) increased knowledge of the positive potential of thoughtful economic development for local environmental, infrastructure, and revenue challenges; and 3) enhanced professional development through individual and classroom exposure to successful practitioners.

5341. PROFESSIONAL REPORT WRITING (3-0). Provides students entering public sector employment with writing, management information, data retrieval skills to communicate ideas and information within and outside an agency; basic writing skills reviewed, including organization of reports and grammatical construction; assignments based on actual internship position of students in public agencies.

5342. STRATEGIES FOR URBAN RESEARCH (3-0). Intermediate level examination of statistical and research techniques appropriate to urban and social analysis. Special attention paid to use of micro computers in social science research. Prerequisite: URPA 5302. Offered as URPA 5342 and CIRP 5317; credit will be granted only once.

5343. APPLIED URBAN ANALYSIS (3-0). Group and individual projects to develop research studies or strategies, data reports for local government, agency or citizen group; techniques appropriate to task utilized. P/F only.

5344. QUALITATIVE METHODS (3-0). The study of qualitative research and analysis methods. Offered as CIRP 5346 and URPA 5344; credit will be given only once.

5345. EVALUATION RESEARCH (3-0). Methodological issues in evaluating public programs; identification of variables, indicators and analyses formats presented. Prerequisite: URPA 5302.

5346. DATA ANALYSIS (3-0).

5347. DEMOGRAPHIC METHODS (3-0). Examination of sources of data-census, vital statistics, special surveys, reports, special studies; techniques of analysis with particular emphasis on growth and projection models, interpretation of findings as a major policy area in urban analysis.

5348. COST BENEFIT ANALYSIS (3-0). Reviews theory of cost-benefit and cost-effective analyses; explores the research, measurement and methodological requirements for the assessments of costs and benefits. It is recommended that students have completed at least one graduate course in research and one graduate class in public finance.

5350. PRINCIPLES OF PUBLIC ADMINISTRATION (3-0). The discipline and professional nature of public administration, trends and major issues, career planning for public service, and major sources of information for professional research.

5351. HUMAN RESOURCES (3-0). Structure, role, and evolution of the Civil Service, current personnel policies, formal tasks e.g. examination, recruitment, position classification, and collective bargaining.

5352. PERSONNEL MANAGEMENT AND CONFLICT RESOLUTION IN THE PUBLIC SECTOR (3-0). Labor management at all levels of government, ability to work together to solve problems. Emphasis on collective and interest based bargaining, mediation, labor management partnership. Simulation exercises teach dynamics of bargaining, negotiation, problem solving, and small group dynamics.

5353. URBAN GOVERNMENT REFORM AND INNOVATION (3-0). Designed to acquaint students with urban governance reform and innovation. Course will explore how reformed government differs from traditional bureaucracy by contrasting it with entrepreneurial government and other innovations. Examines some of the areas most in need of reform, including service delivery, organizational capacity, and fiscal decentralization.

5354. MANAGEMENT OF NON-PROFIT ORGANIZATIONS (3-0). This course examines the different management areas and techniques within the nonprofit organization such as institutional management, leadership and management and the differences between them, fund-raising and financial administration, human resources-staff, volunteer, and board-coordination, internal needs assessment, planning, performance measurements, and the organizational environment and culture.

5355. NON-PROFIT INSTITUTIONS (3-0). This course examines non-profits as community institutions with an outward focus: the political, economic, and inter-organizational environment, fund-

raising and financial management, community relations and needs assessment, the role of the volunteers, boards and community leaders, marketing, and legal and government issues.

5356. PUBLIC ENTREPRENEURIAL MANAGEMENT (3-0). Public entrepreneurship involves the use of public powers, and partnerships with individuals, firms and other organizations, to achieve public purposes. The focus will be on creative management techniques and methods employed in managing the public sector.

5357. STRATEGIC PLANNING, POLICY AND MANAGEMENT (3-0). Readings and case studies of strategic planning and management in the public and non-profit sectors; application of principles to an actual situation, involving stakeholder identification, environmental scanning, and formulation of mission statements, goals, and strategies. Offered as CIRP 5312 and URPA 5357. Credit will be granted only once.

5358. ETHICS IN THE PUBLIC SERVICE (3-0). This course examines public service theoretical ethics literature to provide a basis for each student to both reflect upon and expand their comprehension of the values and processes of ethical decision making. Beyond theoretical works, it addresses the application and evaluation of theory against the professional, workaday reality of case studies, ethical codes and other relevant materials. Three major learning objectives are: 1) achievement of a solid understanding of the dominant theoretical perspectives in the public service ethics literature; 2) competency in the development of guidelines and procedures that encourage ethical behavior, and 3) enhancement of the reach and resiliency of each member's personal commitment to public service ethics.

5359. ORGANIZATIONAL DIAGNOSIS (3-0). This class deals with tools and techniques necessary to manage public organizations. The learning objectives include ability to conduct an organizational diagnostic; and familiarity with group procedures and facilitation techniques involved in organizational change.

5360. URBAN MANAGEMENT/PLANNING INTERNSHIP (3-0). Designed to integrate work experience and coursework through a series of brief work-related assignments; presentations by local planning and management practitioners and class discussions and exercises. Enrollment is open to both pre-entry and in-career students. Formal internship placements with agency mentors will be arranged. P/F only.

5361. INTERNATIONAL ORGANIZATIONS (3-0). The course focuses on the rise of governmental and nongovernmental organizations in geopolitics, international development, and environmental management. It analyzes their institutional histories, their organizational structures and cultures, and their role as institutional policy actors in the global diffusion of policy initiatives and managerial knowledge and practices.

5362. URBAN DIVERSITY (3-0). Examines the growing spatial and social diversity of cities; how physical as well as socioeconomic urban structures have fostered race, class, and gender inequalities; how urban policies have addressed and can address these issues. Offered as CIRP 5362 and URPA 5362.

5363. CIVIL RIGHTS AND URBAN MINORITIES (3-0). Examines the changes in and growth of the civil rights of minorities in the United States from the close of the Civil War to the present. This is accomplished through the study of court decisions, legislation, and the civil rights movement in the 1950s and 1960s, as seen through the eyes of contemporary writers, including William Faulkner, Alice Walker, and Alex Haley.

5364. INSTITUTIONAL AND OTHER RADICAL ECONOMIC THEORIES (3-0). Examines the theoretical bases of institutional and other radical paradigms of the economic process and the alternative economic policies that logically flow from them. These are compared to and contrasted with the orthodox, or neo-classical, theoretical model of economics, and the economic policies that logically are derived from it. Emphasis will be on how and why the neo-classical model remains the dominant model for economic policy in Western, capitalist countries.

5365. FOUNDATIONS OF ENVIRONMENTAL POLICY (3-0). Explores how environmental controversy is rooted in conflict between a number of schools of environmental policy thought with divergent perspectives on issues such as how to define progress, how to balance the needs of economy and ecosystem, how to cope with environmental complexity, and what role science should play in environmental affairs. Also offered as CIRP 5343; credit will be granted only once.

5366. U.S. IMMIGRATION POLICIES AND PLANNING FOR IMMIGRANTS (3-0). A seminar course where weekly readings would include: perspectives on international migration theory; the evolution of U.S. immigration policy and national security; theories and urban issues related to immigrant assimilation and incorporation; urban ethnic economies and ethnic enclaves; segregation and housing of immigrants; globalization and immigrant labor networks; governance issues with providing education and other public services to immigrants and their children; and social work issues regarding generational conflict in immigrant families.

5390. TOPICS IN URBAN THEORY (3-0). Different topics explored on an intensive basis, especially recent theoretical approaches. May be repeated for credit as topic changes.

5391. TOPICS IN URBAN POLICY (3-0). Different topics and approaches in analysis of urban problems. May be repeated for credit as topic changes.

5392. TOPICS IN URBAN MANAGEMENT (3-0). Selected topics on current management problems including small city management, community-neighborhood relations, citizen involvement programs and techniques, personal and professional effectiveness as a total person, intergovernmental strategies and styles, public-private sector collaboration and co-planning, privatization, and other alternatives to economic service delivery. May be repeated as topic changes.

5394. SPECIAL TOPICS IN URBAN RESEARCH (3-0). Different topics each semester concentrate on a variety of methodological techniques and research strategies, such as demographic research and survey techniques. May be repeated for credit as topic changes.

5395. CONFERENCE COURSE IN URBAN AFFAIRS (3-0). Reading and research in a specialized area of urban affairs under the direction of a member of the graduate faculty.

5396. PROJECT REPORT (3-0). Student prepares report focusing on specific policy or professional issue, utilizing appropriate research techniques; subject area and design of project report with consent of instructor. Graded P/F/R only. Prerequisite: URPA 5341.

5397. RESEARCH REPORT (3-0). Student prepares report comparable to a journal article focusing on research issue, utilizing appropriate theory and research techniques; subject area and design of research report with consent of instructor. Graded P/F/R only. Prerequisite: URPA 5342.

5398. THESIS (3-0). A thesis conforming to University and departmental requirements may be prepared by graduate students in urban affairs. Graded F, R.

5399. PUBLIC ADMINISTRATION CAPSTONE (3-0). This integrative applied research course assesses the student's ability to analyze, synthesize, and formulate cogent recommendations to solve a real public sector problem. Students will write the capstone paper using concepts drawn from the MPA core curriculum, their chosen

emphasis track, and the student's professional public work experience. Students are required to successfully defend their capstone paper before a Public Administration Forum consisting of SUPA faculty, students, and other interested parties. Prerequisite: completion of all other course work required for the MPA degree, including core courses and emphasis area courses, unless an exception is approved by the MPA advisor.

5698. THESIS (6-0). A thesis conforming to University and departmental requirements may be prepared by graduate students in urban affairs. Graded P/F/R.

6301. THEORETICAL FOUNDATIONS OF URBAN AFFAIRS (3-0). Explores the development and function of theoretical models in urban affairs. It examines the major theories from the social sciences designed for framing urban issues and public policy.

6305. SEMINAR IN URBAN POLICY PROCESSES (3-0). Final course in urban policy field; focus on the political, economic, and sociological institutions in the policy process, including various theoretical approaches, and application of these multidisciplinary perspectives in the analysis of specific policy issues.

6306. SEMINAR IN PUBLIC ADMINISTRATION (3-0). Final course in the public administration field, focuses on review and integration of the theories and principles of public administration.

6310. MONETARY AND FISCAL POLICY: THE FEDERAL ROLE (3-0). Examination of the role of the federal government in maintaining economic stability, ensuring full employment and controlling inflation; exploration of liberal interventionist, conservative and radical theories of state economic management to assess the various policy alternatives and the importance of interest groups.

6315. PUBLIC ADMINISTRATION THEORY (3-0). This course is designed to critically examine public administration theory through the lenses of various governance models that have been proposed beginning with Weber's "ideal"; bureaucratic model through Osborne and Gaebler's market model to Fox and Miller's postmodern discourse model. The course begins by examining each governance model's stated or implied assumptions (about man, government, state, etc.) Second, the course considers the political philosophy and conceptual pillars on which the models are theoretically founded. Finally, the course examines the ideas of what constitutes a state as it might be relevant to a particular model and public administration.

6320. ADVANCED ORGANIZATION THEORY (3-0). The purpose of this advanced seminar is to examine the role of public agencies as organs of the State. It focuses on federal, urban, and nonprofit organizations. Learning objectives include understanding of interpretive, critical, and postmodern critiques of State's institutions; and application of power, knowledge, and gender lenses to the analysis of organizational practices, culture, and policy actions. Prerequisite: URPA 5320 or URPA 5323.

6340. RESEARCH DESIGN (3-0). Advanced course especially for Ph.D. students; covers logic of research design and problems of structure. Emphasis on empirical and quantitative studies.

6346. ADVANCED DATA ANALYSIS (3-0). An introduction to selected advanced techniques related to planning analysis. Subjects include advanced applied regression analysis, multivariate logit analysis, and multinomial logistic regression. Applications of projection techniques, land use and transportation models, and methods of regional analysis. Offered as CIRP 6346 and URPA 6346. Credit will be given only once.

Public and Urban Administration (PUAD)

6399. DISSERTATION (3-0). Graded F/R only.
6699. DISSERTATION (6-0). Graded F/R only.
6999. DISSERTATION (9-0). Graded P/F/R.

Urban Planning and Public Policy (UPPP)

6399. DISSERTATION (3-0). Graded F/R only.
6699. DISSERTATION (6-0). Graded F/R only.
6999. DISSERTATION (9-0). Graded P/F/R.

Program in City and Regional Planning

www.uta.edu/supa/cirp

Area of Study and Degree
City and Regional Planning
M.C.R.P.

Master's Degree Plans
Thesis and Thesis Substitute

Graduate Advisor
Enid Arvidson
University Hall
817.272.3071

Program Graduate Faculty
Professors
Anjomani, Cornehls, Goldsteen

Associate Professors
Arvidson, Li, Wegner

Assistant Professors
Grodach, Howard

Interdisciplinary Graduate Faculty
Professors
Cole, Barrett, Whelan (visiting), Wyman

Associate Professors
Hissong, Rodriguez, Tees

Assistant Professors
Casey, Guignard, Martinez-Cosio, Vicino

Fax: 817.272.5008
www.uta.edu/supa/Academics/master-of-city-and-regional-planning
E-mail: elucas@uta.edu
Master's in City and Regional Planning,
UTA Box 19588, Arlington, TX 76019-0588

Mission

The mission of the PAB-accredited Master's in City and Regional Planning (MCRP) is to prepare students for successful careers as professional planning practitioners in responsible positions with public, private and nonprofit organizations; to conduct basic and applied research into community planning and development issues, problems and opportunities, and publish the results thereof; and to deliver planning-related training and services to enhance the effectiveness of public, non-profit and private organizations. The MCRPmission, goals and objectives, and accreditation efforts are shaped in consultation with the twelve-member MCRP Advisory Board composed of alumni and area practitioners.

Program Philosophy

The Master's of City and Regional Planning program prepares students for planning careers in the public, private and nonprofit/nongovernmental sectors. Students study the scope and issues as well as the interdisciplinary relationships involved in city and regional planning. The application of planning theory, knowledge, techniques, and skills to "real world" planning problems gives students practical experience with the profession of planning in a variety of topic areas. Curriculum requirements of substantive and procedural planning knowledge, analytical skills and methods, emphasis area and specialization, and collaborative and practical experience combine to provide the knowledge and skills needed for guiding the future city, region, and nation.

Practical Application: An important aspect of the planning curriculum—the practical application of theory and research—is facilitated by research activities and centers within the School and University. These centers, which allow students to exercise professional responsibilities in collaborative endeavors, include: Center for Economic Development Research and Service; Center for International Research, Education and Development; and the Institute for Urban Studies.

Emphasis Areas and Specializations: The MCRP Program offers four emphasis areas, and encourages students to select an emphasis area that fits their own needs and goals. Students may also design their own emphasis area, subject to approval by the Graduate Advisor.

Degree Requirements

A 48 credit hour program is composed of:

- 24-27 hours of required core courses (24 hour for thesis students; 27 hours for non-thesis students)
- 12 hours of emphasis area courses
- 6-9 hours of electives (6 hours for thesis students; 6-9 hours for non-thesis students)
- 1-6 hours of thesis (6 hours) or thesis substitute (either professional report (3 hours) or comprehensive exam (1 hour))

Each student must see the Graduate Advisor before the end of the first semester of study to discuss the emphasis area and thesis or thesis-substitute options.

1. **Required Core Courses (24 hours for thesis students; 27 hours for non-thesis students)**
   A. Foundation Courses (9 hours)
   SUPA 5300 Foundations of Urban Planning and Sociology
   SUPA 5301 Foundations of Urban Politics and Economics
   SUPA 5302 Foundations of Urban Research and Analysis

B. Planning Core Courses (15 hours thesis students; 18 hours non-thesis students)

Required:

CIRP 5303 Planning History and Theory
CIRP 5310 Urban Structure, Policy and Planning
CIRP 5318 Techniques of Planning and Administrative Analysis

Choose one of the following:

CIRP 5304 Comprehensive Planning, Land Use, and Policy Implementation
CIRP 5305 Land Use Management and Development

Thesis students choose one of the following:

Non-Thesis students choose two of the following:

CIRP 5331 GIS Workshop (only students earning the GIS Certificate may take CIRP 5331 to satisfy this requirement)
CIRP 5332 Project Planning
CIRP 5333 Project Planning

2. Emphasis Area Courses (12 hours)

Model sets of courses have been developed, and are available from the Graduate Advisor, for the following most common emphasis areas:

Economic and Community Development and Housing
Environmental Planning, Policy, and Management
Land Use and Physical Planning
Transportation Planning

Any combination of courses developed by the student with counsel from an appropriate faculty member may, with approval of the MCRP Graduate Advisor, constitute an emphasis area. For example, a student wishing to emphasize international planning, regional planning, social planning, historic preservation, or some other emphasis should work with the Graduate Advisor to develop a set of courses that reflects this emphasis.

3. Thesis or Thesis Substitute

Thesis Option (6 hours):

The thesis option is designed for students interested in pursuing a career in research or private consulting, or for students intending to obtain another advanced degree. Students choosing the thesis option must take 3 hours from among CIRP 5331, 5332 and/or 5333 (only students earning the GIS Certificate may take CIRP 5331 to satisfy this requirement), and may take 6 hours of electives. Thesis students develop a research question related to their emphasis area that can be investigated and analyzed via library research, typically supplemented by empirical research. Thesis students must defend their thesis in an oral examination conducted by all members of the student's supervising committee but which is also open to all members of the faculty. The thesis supervising committee must have copies of the thesis at least two weeks prior to the thesis defense. The format of the thesis manuscript must be approved by the Graduate School before the degree can be conferred. All thesis students must be aware of the preparation requirements, components, and deadlines associated with the thesis, final defense, and submission of the final copies of the thesis to the supervising committee and Graduate School. The deadline dates for each semester are published in the Graduate School Calendar (**http://www.uta.edu/uta/acadcal**).

Thesis Substitute Option (1-3 hours):

Students choosing the thesis substitute must take 6 hours from among CIRP 5331, 5332, and/or 5333 (only students earning the GIS Certificate may take CIRP 5331 to satisfy this requirement).

Professional report (3 hours): Students choosing the professional report must take 6 hours of electives. Students opting for the professional report should choose a topic that falls within their emphasis area. They should consult with their emphasis area counselor before beginning the report to ensure their counselor will serve as chair of the supervising committee or suggest another possible chair. Students must work closely with their committee chair to obtain guidance in writing the report. Students must defend their professional report in an oral examination conducted by all members of the student's supervising committee but which is also open to all members of the faculty. The supervising committee must have copies of the professional report at least one week prior to the scheduled defense.

Comprehensive exam (1 hour): Students choosing the comprehensive exam must take 9 hours of electives and will graduate with a total of 49 credit hours. Students opting for the comprehensive exam must meet regularly with the course faculty to prepare for the exam. The exam is offered at the end of the semester in which the student is enrolled and may be oral and/or written, at the discretion of the course faculty. The exam covers material related to the required core, the emphasis area, and other material that MCRP faculty believe is relevant.

4. Electives (6 hours for thesis students; 6-9 hours for thesis substitute students)

Any relevant courses may be chosen as electives. Master's students who are also working toward a certificate may choose electives that also count toward the certificate.

Dual Degrees

Dual degrees can be arranged with any suitable program. By participating in a dual degree program, students may apply 6-18 total semester credit hours jointly to meet the requirements of both degrees, thus reducing the total number of hours required to earn each degree separately (subject to the approval of Graduate Advisors from both programs). Degree plans, thesis or professional report proposals and programs of work must be approved by Graduate Advisors from both programs. The successful candidate will be awarded both degrees rather than one joint degree.

To participate in the dual degree program, students must make separate application to each program and must submit a separate program of work for each degree. Those interested in the dual degree program should consult the appropriate Graduate Advisors for further information on course requirements. See also the statement on Dual Degree Programs in the general information section of the catalog.

Arrangements to offer the following dual degrees have already been made between CIRP and the appropriate Graduate Advisors.

M.C.R.P. and M.P.A. (Master of Public Administration)
M.C.R.P. and M.A. (Master of Arts in Urban Affairs)
M.C.R.P. and M.S.W. (Master of Social Work)
*M.C.R.P. and M.Arch. (Master of Architecture)
M.C.R.P. and M.S.L.A. (Master of Science in Landscape Architecture)
M.C.R.P. and M.S.C.E. (Master of Science in Civil Engineering)/ M.Engr. (Master of Engineering)
M.C.R.P. and M.S.Ev.S.E. (Master of Science in Environmental Science and Engineering)

*CIRP students without a Bachelor's degree in Architecture will take Path A in the architecture program; those with an undergraduate degree will take Path B. All 15 credit hours of electives in the M.Arch. program will be taken in the MCRP program. Only in special instances may students select the thesis substitute plan of the MCRP program.

Certificate in Development Review (CDR)

The Certificate in Development Review provides training in zoning, subdivision plat review, site design, communication skills, and urban development, while keeping in mind the interests of citizens and the spirit of places. These skills are essential for planners who want to understand proposed development activity, ensure that proposed development is consistent with a city's vision, and facilitate review of development proposals. The program is geared for both entry-level planners/planning technicians, and for professionals in allied fields such as architecture, landscape architecture, law, engineering, and real estate.

The certificate requires completion of 15 hours of graduate-level coursework. All students must take CIRP 5304 Plan and Policy Implementation. Two courses in land use and development are selected from: CIRP 5305 Land Use Planning, Management and Development; CIRP 5311 Urban Design; CIRP 5316 Land Use Law; CIRP 5322 Economic Development; or CIRP 5345 Planning and Real Estate Development. One course in communication is selected from: CIRP 5314 Advanced Planning Graphics; CIRP 5363 Communication Skills in Planning and Management; or URPA 5341 Professional Report Writing. Lastly, one course in agencies and policies is selected from: CIRP 5306 Urban Revitalization; CIRP 5313 Urban Growth Policies; CIRP 5319 Agencies of Planning and Administration; or CIRP 5328/URPA 5326 Public Budgeting.

Certificate in Geographic Information Systems (GIS)

The Geographic Information Systems (GIS) certificate program provides education, skills, applications, and training for graphic displays of neighborhood, city, regional, and small-scale areas. GIS is a powerful computer-based software tool having capabilities to store, manipulate, analyze, and display spatially referenced information. GIS is used at all levels of government at increasing rates and is an effective tool for business, industry, and institutions.

Upon completion, students will be proficient in selecting, using, and applying appropriate computer hardware and software to display graphic information about their subjects of study whether their field is business, geology, biology, social work, architecture, landscape architecture, or any other discipline.

The certificate requires completion of CIRP 5356 (Introduction to GIS), CIRP 5357 (Intermediate GIS), and CIRP 5331 (GIS Workshop) as well as one or two additional courses to be selected by the student with approval of the GIS Certificate Program advisor. Examples of courses that would be approved include ARCH 5329, CIRP 5320 and 5340, CSE 5330 and 5356, GEOL 5303, and INSY 5310 and 5335.

City and Regional Planning (CIRP)

5191. CONFERENCE COURSE (1-0). Special subjects and issues as arranged by individual students and faculty members. May be repeated for credit.

5193. MASTER'S COMPREHENSIVE EXAMINATION (1-0). Directed study, consultation and comprehensive examination over coursework leading to thesis substitute for MCRP degree. Required of all thesis substitute students not enrolled in other courses during semester in which they plan to graduate.

5197. PROFESSIONAL REPORT (1-0). Preparation of final professional report as a thesis substitute for MCRP degree. Required of all thesis substitute students not enrolled in CIRP 5193.

5297. PROFESSIONAL REPORT (2-0). Preparation of final professional report as a thesis substitute for MCRP degree. Required of all thesis substitute students not enrolled in CIRP 5193.

5303. PLANNING HISTORY AND THEORY (3-0). Various theories of planning including rational comprehensive planning, communicative action, social learning, radical planning. Sets theories within their historical contexts, and examines the social and political details of each era to show the development of diverse planning practices and theories of planning. Evaluates the values embodied in different theories and the effects of different theories on practice and social change. Should be taken in the first year of study.

5304. PLAN AND POLICY IMPLEMENTATION (3-0). Development of skills in document preparation including proper methods in preparing and administering the development controls of zoning ordinances, subdivision regulations, and other municipal codes and regulations.

5305. LAND USE, MANAGEMENT AND DEVELOPMENT (3-0). Assesses land use, management and development and considers new directions. Relates comprehensive planning, environmental management, and land use.

5306. URBAN REVITALIZATION (3-0). Examines various urban revitalization projects from coordinated, large-scale ventures to grassroots and informal neighborhood initiatives. Emphasis on the history, logic, politics, and implementation of these projects as well as their physical, social, and economic outcomes.

5307. URBANIZATION IN THE DEVELOPING WORLD (3-0). Explores the social, political and spatial dimensions of urbanization processes in developing countries. Covers urban, social, and cultural movements as well as development, processes of urban-rural migration, and globalization. The course will cover all developing regions of the world with an emphasis on Latin American countries.

5309. TRANSPORTATION/LAND USE MODELING AND POLICY ANALYSIS (3-0). Overview of transportation/land use with specific transportation models and simulation methods; topics include economic theory of travel demand, land use models, UTPS framework for travel demand estimation, disaggregated travel demand models and abstract mode models.

5310. INTRODUCTION TO URBAN STRUCTURE, POLICY AND PLANNING (3-0). Overview of spatial structure and substantive planning areas (e.g., urban design, housing, transportation, etc.); fundamentals and general information necessary for professional planners, including social, economic, and urban planning and political issues and problems; introduction to fiscal impact analysis.

5311. ELEMENTS OF URBAN DESIGN (3-0). Study of contemporary urban form and environmental design, emphasizing visual-spatial qualities, social needs and economic linkages. Examination of processes, methods and techniques for solving urban design problems.

5312. STRATEGIC PLANNING, POLICY AND MANAGEMENT (3-0). Readings and case studies of strategic planning and management in the public and non-profit sectors; application of principles to an actual situation, involving stakeholder identification, environmental scanning, and formulation of mission statements, goals, and strategies. Offered as CIRP 5312 and URPA 5357. Credit will be granted only once.

5313. URBAN GROWTH POLICIES (3-0). Study of the political, societal and physical policies involved in urban growth management.

5314. ADVANCED PLANNING GRAPHICS AND PRESENTATION WORKSHOP (3-0). Techniques of presentation, use of graphic tools, and review of recent media advances.

5315. TRANSPORTATION POLICIES, PROGRAMS AND HISTORY (3-0). Transportation and related programs and policies in relation to city development and housing patterns. Interdependencies

of land use, building development, and social change are explained as transportation-related.

5316. LAND USE PLANNING AND THE LAW (3-0). Explores the law of land use in the context of the American legal, economic, and political systems. Examines leading court decisions and precedents for their background, content, and applicability to contemporary land use. Offered as CIRP 5316 and URPA 5331. Credit will be granted only once.

5317. INTERMEDIATE DATA ANALYSIS (3-0). Context and role of data analysis, computers and descriptive and inferential statistical techniques in urban analysis and planning. Fundamentals of inductive statistics, probability and sampling theory, hypothesis testing, chi square, variance analysis, and bivariate and multivariate regression analysis. Also offered as URPA 5342; credit will be given only once.

5318. TECHNIQUES OF PLANNING AND ADMINISTRATIVE ANALYSIS (3-0). The use of quantitative and qualitative analysis techniques in urban and regional planning including problem solving processes, group techniques and Delphi; population projection, project evaluation, land use and transportation models; economic base analysis, input-output, and shift and share.

5319. AGENCIES OF PLANNING AND ADMINISTRATION (3-0). Contemporary managerial functions involved in running public, private, or non-profit organizations: goal setting, planning, organizing, delegating and motivating others, personal productivity and motivation, time and stress management, controlling, and project management.

5320. DATABASE MANAGEMENT FOR URBAN PLANNING AND ADMINISTRATION (3-0). Concepts and computer applications of data management. Topics include data sources, data models, database design, data query, data analysis, and database management techniques for urban planning, management and administration. Credit will be given only once.

5321. VISUAL BASIC AND GIS (3-0). Provides an introduction to the techniques and applications of computer graphics and mapping for presenting socioeconomic information in graphic and spatial form.

5322. ECONOMIC DEVELOPMENT PLANNING AND POLICY (3-0). Introductory seminar in subnational economic development programs in the U.S. Covers basics of location theory, economic planning, budgeting, incentives, public and private revenue sources, analysis methods such as central place and economic base, intergovernmental efforts, redevelopment, high tech, trade and/or tourism.

5323. HISTORIC PRESERVATION (3-0). Covers elements of historic designation, rehabilitation, financial incentives, district regulations, and preservation impacts.

5324. COMMUNITY DEVELOPMENT (3-0). Focuses on current problems of community development and neighborhood revitalization. Housing, community assets, the roles of community development corporations and social capital in cities, and community economic development will be analyzed. Federal, state, and local policies, with grassroots initiatives evaluated for effectiveness on promoting alternatives for community building and organizing. Also offered as URPA 5313; credit will be granted only once.

5326. CULTURAL PLANNING AND URBAN DEVELOPMENT (3-0). This course examines the range of arts and cultural planning efforts in North America and European cities. The impact of federal, state, and local governments, cultural industries, neighborhood and community-based organizations, and artist groups on local and regional economies, urban spaces, and social groups will be discussed.

5328. PUBLIC BUDGETING (3-0). Rationale of public budgeting including legal, political, social, and administrative perspectives; history of budgeting techniques and such approaches as Management by Objectives, and Program and Mission Budgeting. Offered as CIRP 5328 and URPA 5326. Credit will be granted only once.

5331. GIS WORKSHOP (3-0). Skills, practical experience, problem-solving methods and techniques in geographic information systems. Capstone course for GIS Certificate Program; substitutes for one Project Planning Course.

5332. PROJECT PLANNING (0-9). Skills, practical experience, problem-solving methods and techniques in mapping, design, planning, and research projects. Studio and seminar for field studies in the practical application of city and regional planning. This course is designed to provide experience working under contract with a "real world" client. It should be taken in the second half of the student's program of study; exceptions may be made for those with unique backgrounds. May be repeated as topic changes.

5333. PROJECT PLANNING (0-9). Skills, practical experience, problem-solving methods and techniques in mapping, design, planning and research projects. Studio and seminar for field studies in the practical application of city and regional planning. This course is designed to provide experience working under contract with a "real world" client. It should be taken in the second half of the student's program of study; exceptions may be made for those with unique backgrounds. May be repeated as topic changes.

5340. GIS AND SUITABILITY ANALYSIS (3-0). Acquaints students with theoretical and practical aspects of suitability analysis process or activity allocation on land use/environmental policies. Uses Geographic Information System (GIS) and computer models for overlaying map analysis, buffering, market demand and activity locations, etc. to incorporate environmental and ecological factors into the determination of land development potential including soils, slope, drainage, vegetation, and related factors.

5341. ENVIRONMENTAL REGULATIONS: LAWS AND PLANNING (3-0). Federal, state, and local environmental regulations which have effect on the practice of city and regional planning. Specific articles, laws, and directives contrasted and compared to local city design and development controls. Subjects include CERCLA, RCRA, SARA, TSCA, OSH Act, among others.

5342. ENVIRONMENTAL POLICY (3-0). Focuses on the physical environmental dimensions of urbanization including such factors as pollution, waste disposal, and land use; stresses the role of economic, social, and political institutions as these affect environmental quality of the city. Offered as CIRP 5342 and URPA 5317; credit will be granted only once.

5343. FOUNDATIONS OF ENVIRON POLICY (3-0). Explores how environmental controversy is rooted in conflict between a number of schools of environmental policy thought with divergent perspectives on issues such as how to define progress, how to balance the needs of economy and ecosystem, how to cope with environmental complexity, and what role science should play in environment affairs. Also offered as URPA 5365; credit will be granted only once.

5344. HUMAN SERVICES PLANNING (3-0). Social welfare institutions: private and public; needs assessment, resource allocation, procedures, city/state/federal/private policy review; highlights of current system demands and changes. Also offered as URPA 5316.

5345. PLANNING AND REAL ESTATE DEVELOPMENT (3-0). The goals, strategies, methods, and achievements of major participants in the urban land and building markets are examined. Land owners, speculators, real estate brokers, developers, bankers, lawyers, non-profit builders, and government agencies are studied, as well as such business tools as: market and feasibility analysis, appraisal techniques, proforma analysis, and others.

5346. QUALITATIVE METHODS (3-0). The study of qualitative research and analysis methods. Offered as CIRP 5346 and URPA 5344; credit will be given only once.

5347. URBAN PROBLEMS (3-0). Specific urban problems examined in depth, traced to their historical origins to see how they or similar problems have been dealt with in other times and places. Students will then propose possible solutions to the problems in their contemporary form. Offered as CIRP 5347 and URPA 5319.

5350. ENVIRONMENTAL PLANNING (3-0). Overview of environmental planning issues and problems, including basic ecological principles; development and effects of the chemical industry; policies on international issues; environmental justice and ethics; environmental economics, including externalities and public goods; sustainable development; overviews of planning for air quality, water quality, solid waste, pollution prevention, habitat conservation, etc.; and plan implementation, including enforcement, regulation and funding.

5351. TECHNIQUES OF ENVIRONMENTAL ASSESSMENT (3-0). Analysis of impact assessment documents from a variety of projects; study of federal laws and regulations governing the process; state impact assessment laws and regulations; and procedures used in other nations. Students will prepare an environmental assessment for a real-world project. Overviews of environmental site assessment, MIS documents, and environmental auditing will also be given.

5353. ENVIRONMENTAL LAW (3-0). This seminar examines the role of environmental law within the political-institutional framework of the American system. Emphasis is on the legal-judicial aspects of environmental regulation. Analyzes the decision of U.S. courts as these affect and interpret environmental laws and regulations for their legality and constitutionality.

5354. HOUSING PLANNING, POLICY AND FINANCE (3-0). Evaluation of the effect of state, local, and federal housing policy on the urban arena. Topics will be selected from federal subsidy programs, tax subsidies, operations of financial intermediaries, and related areas.

5356. INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS (3-0). Introduction to GIS and the application of computer graphics systems in the storage, processing, and retrieval of geographic urban and regional information; case examples and related projects and issues of system management.

5357. INTERMEDIATE GEOGRAPHIC INFORMATION SYSTEMS (3-0). Applications of GIS to typical urban and regional geographic information problems and projects.

5358. INTELLIGENT TRANSPORTATION SYSTEMS (ITS) AND PLANNING (3-0). Concepts, components, deployments, and implementations of ITS; methods for ITS evaluations; linkage between ITS and traditional transportation planning; and issues related to ITS planning and deployment.

5360. COMPUTER METHODS FOR TRANSPORTATION PLANNING (3-0). Applications of computer software (for example, TransCad, Tranplan) in transportation planning modeling. Theories of residential location choice and travel behavior. Topics may include land-use and travel demand models, trip distribution models, mode choice models, and network equilibrium.

5362. URBAN DIVERSITY (3-0). Examines the growing spatial and social diversity of cities; how physical as well as socioeconomic urban structures have fostered race, class, and gender inequalities; how urban policies have addressed and can address these issues. Offered as CIRP 5362 and URPA 5362.

5363. COMMUNICATION SKILLS IN PLANNING AND MANAGEMENT (3-0). Principles of and practical communication skills for planners and administrators: interpersonal communications, critical analyses, effective writing, oral presentations, creative thinking, team building, participative decision making, and conflict management.

5364. ECONOMIC BASE AND INDUSTRIAL DEVELOPMENT POLICY (3-0). Theories and methods of local and regional economic base analyses; techniques for inventorying strengths, weaknesses, opportunities and threats of local capital, labor and land resources; alternative policy responses to industrial development issues arising from economic base analysis.

5391. CONFERENCE COURSE (3-0). Special subjects and issues as arranged by individual students and faculty members. May be repeated for credit.

5395. SPECIAL TOPICS IN PLANNING (3-0). Selected topics in City and Regional Planning. May be repeated for credit.

5397. PROFESSIONAL REPORT (3-0). Preparation of final professional report as a thesis substitute for MCRP degree. Required of all thesis substitute students not enrolled in CIRP 5193.

5398. PLANNING THESIS (3-0). Graded F/R.

5698. PLANNING THESIS (6-0). Graded F/R.

5998. PLANNING THESIS (9-0). Graded P/F/R.

6305. SEMINAR IN URBAN PLANNING PROCESSES (3-0). Final course in urban planning field. Focus on the various political, economic, and social institutions and theoretical approaches in the planning process, and application of these multidisciplinary perspectives in the analysis of specific planning issues.

6346. ADVANCED DATA ANALYSIS (3-0). An introduction to selected advanced techniques related to planning analysis. Subjects include advanced applied regression analysis, multivariate logit analysis, and multinomial logistic regression. Applications of projection techniques, land use and transportation models, and methods of regional analysis. Offered as CIRP 6346 and URPA 6346. Credit will be given only once.

Program in Public Administration

www.uta.edu/supa

Area of Study and Degree

Public Administration
M.P.A.

Master's Degree Plan

Non-Thesis

Graduate Advisor

David W. Tees
501B University Hall, 817.272.3304

Program Faculty

Professors

Barrett, Cole, Cornehls, Wyman

Associate Professors

Arvidson, Hissong, Rodriguez, Tees, Wegner

Assistant Professor

Vicino

Visiting Professor

Whelan

Professor Emeritus

Taebel

Department of Political Science

Clark, Farrar-Myers, Gutierrez, Knerr

General

Public Administration is concerned with the formulation, analysis and implementation of public policy in urban institutions. With an interdisciplinary focus, this program gives special emphasis to the urban community and the special challenges of public managers who serve in urban areas. The curriculum is designed to develop leadership capacity, understanding of the political, social, and economic characteristics of today's urban environment and the ability to apply current theories of management and analysis to difficult management issues. The program is meant as preparation for those entering management careers in government for the first time or as career development for those already employed who are seeking upward mobility in public management. The Master of Public Administration is a joint program of the School of Urban and Public Affairs and the Department of Political Science.

The MPA degree at the School of Urban and Public Affairs is accredited by the National Association of Schools of Public Affairs and Administration (NASPAA), and the curriculum conforms to NASPAA standards.

Those seeking admission to the MPA program can choose between two program options: 1) courses taught on campus primarily during evening hours; and 2) SUPA MPA courses taught online through The University of Texas System TeleCampus. Applicants who choose the on-campus option may plan their courses to include the requirements of certificate program such as Urban Nonprofit Management or Public Budgeting and Financial Management. A description of the various certificate offerings can be found in the Urban and Public Affairs section of the catalog. Applicants who choose the online option may find it more convenient at times and are welcome to take some of the scheduled online courses on campus instead.

A hallmark of the MPA program is its distinguished faculty that combines extensive academic and field experience in public administration with a wide range of related backgrounds. Augmenting the permanent faculty are several adjunct professors with impressive credentials in the public management field, including James Kunde, a member of the National Academy of Public Administration and former city manager of Dayton, Ohio; Richard Greene, regional director of EPA and former mayor of Arlington, Texas; and David Gattis, Deputy City Manager of Ben brook, Texas, and past president of the Texas Chapter, American Planning Association.

Objectives

The MPA program is guided by two educational objectives. The first is to create the conditions for students to acquire extensive knowledge of public policy, political systems, administrative practices and research methods as preparation for significant professional careers in the public and/or nonprofit sectors. The second is to prepare students to apply current theories of management and analysis, thereby helping them to master their current work responsibilities as administrators and preparing them for exemplary leadership and management in the increasingly complex urban environment of future years.

Degree Requirements and Courses

The total number of semester credit hours will range from a minimum of 39 to a maximum of 42 as follows: (See departmental listings for course descriptions in other sections of the catalog as follows: URPA: Urban and Public Affairs; POLS: Political Science; CRCJ:

Criminal Justice; SOCI: Sociology; ECON: Economics; HIST: History; ACCT: Accounting. PAD is the course rubric used by the University of Texas at El Paso; PAD courses listed below are available online through UT TeleCampus.)

I. Core Courses (24 hours)

1. SUPA 5300 Foundations of Urban Planning and Sociology
2. SUPA 5301 Foundations of Urban Politics and Economics
3. SUPA 5302 Foundations of Urban Research and Analysis
4. URPA 5309 Federalism and Intergovernmental Relations or URPA 5304 Urban Politics, or POLS 531 4-505 Topics in Public Administration and Policy Making: State and Local Politics and Policies
5. URPA 5320 Public Organization Theory
6. URPA 5326 Public Budgeting or URPA 5324 Urban Public Finance (with the approval of the MPA advisor)
7. URPA 5350 Public Administration or URPA 5322 Politics, Policy, and Public Administration (with the approval of the MPA advisor)
8. URPA 5351 Human Resources

II. Emphasis Areas (12 hours)

Students select an emphasis area and take a total of four courses: two required courses plus two electives from the respective list or any other course(s) with the approval of the MPA advisor.

Emphasis Area 1: Comparative and International Development

Objectives—upon completion of this emphasis track, students should be able to:

1. Demonstrate comprehension of the multidisciplinary concepts and theories of comparative administration, urbanism and politics with emphasis on globalization, urban and regional development, public bureaucracy, traditional and economic elites, modernization, and analyze the role, policies and organization of regional and multinational organizations.
2. Prepare and present a major comparative, scholarly study on a prominent policy or topical issue.

Required courses:

1. CIRP 5307. Urbanization in the Developing World or POLS 5331 Seminar in International Organizations and Law
2. URPA 5327. Comparative Administration and Development or PAD 5355 Comparative Public Administration

Elective courses (select two):

1. PAD 5361. Political Economy of Borders
2. POLS 5314-508. Topics in Public Administration and Policy Making: U.S Public Policy and the Mexican-American Community
3. POLS 5370. Seminar in Border Theory
4. URPA 5307. Urban Geography
5. URPA 5341. Professional Report Writing
6. URPA 5358 Ethics in the Public Service
7. URPA 5361. International Organizations
8. URPA 5366. US Immigration Policies and Planning for Immigrants
9. URPA 5391. Comparative Public Policy—Study Abroad
10. URPA 5392. Urbanization and Development—Study Abroad

Emphasis Area 2: Public Budgeting and Financial Management

Objectives—upon completion of this emphasis track, students should be able to:

1. review, recommend, and interpret operating and capital budget requests taking political, economic, and decision-making processes into account; and
2. assist the budget officer and other higher-level public officials in performing comprehensive financial analyses and developing financial and budgetary recommendations.

Required courses:

1. URPA 5329. Financial Management in the Public and Nonprofit Sectors
2. URPA 5332. Public Capital Budgeting and Planning

Elective courses (select two):

1. URPA 5310. Urban Policy and the Law
2. URPA 5312. Economic Policy
3. URPA 5324. Urban Public Finance
4. URPA 5341. Professional Report Writing
5. URPA 5345. Evaluation Research
6. URPA 5358. Ethics in the Public Service

Emphasis Area 3: Decision Management and Research

Objectives—upon completion of this emphasis track, students should be able to:

1. Demonstrate proficiency in the use of applied analytic tools such as program evaluation, policy analysis, cost-benefit analysis, and other management decision-making tools to aid the public manager make more informed decisions;
2. Assist public managers and other higher-level public officials to understand, analyze, and recommend appropriate solutions to complex public policy issues.

Required courses:

1. CIRP 5318. Techniques of Planning and Administrative Analysis
2. URPA 5345. Evaluation Research

Elective courses (select two):

1. POLS 5314-504. Topics in Public Administration and Policy Making: Public Policy Analysis
2. URPA 5309. Federalism and Intergovernmental Relations or URPA 5304 Urban Politics, or POLS 5314-505. Topics in Public Administration and Policy Making: State and Local Politics and Policies
3. URPA 5310. Urban Policy and the Law
4. URPA 5312. Economic Policy
5. URPA 5341. Professional Report Writing
6. URPA 5342. Strategies for Urban Research
7. URPA 5343. Applied Urban Analysis
8. URPA 5348. Cost-Benefit Analysis
9. URPA 5358. Ethics in the Public Service
10. URPA 5359. Organizational Diagnosis

Emphasis Area 4: Urban Nonprofit Agency Management

Objectives—upon completion of this emphasis track, students should be able to:

1. understand the different management areas and techniques within the nonprofit organization, including institutional management, leadership, fundraising, financial administration, human resources coordination, and planning and performance measurements.
2. understand the role of nonprofits as community institutions with an outward focus, including the political, economic, and inter-organizational environment, as well as marketing, legal, and government policy issues.

Required courses:
1. URPA 5354. Management of Nonprofit Organizations
2. URPA 5355. Nonprofit Institutions

Elective courses (select two):
1. CIRP 5319. Agencies of Planning and Administration
2. MARK 5311. Marketing
3. URPA 5303. The Metroplex: A Survey of Urban Affairs, Planning and Administration
4. URPA 5313. Community Development
5. URPA 5318. Social Welfare Policy
6. URPA 5329. Financial Management in the Public Sector
7. URPA 5330. Community and Neighborhood Organization
8. URPA 5341. Professional Report Writing
9. URPA 5345. Evaluation Research
10. URPA 5356. Public Entrepreneurial Management
11. URPA 5357. Strategic Planning and Management (also offered as CIRP 5312)
12. URPA 5358. Ethics in the Public Service
13. URPA 5359. Organizational Diagnosis

Emphasis Area 5: Law and Public Policy

Objectives—upon completion of this emphasis track, students should be able to:
1. acquire a more in depth understanding of and familiarity with the legal/policy interface that affects their areas of expertise; and
2. proactively affect the laws and regulations they need in order to be effective public administrators.

Required courses:
1. URPA 5310. Urban Policy and the Law
2. URPA 5325. Urban and Administrative Law

Elective courses (select two):
1. CIRP 5316. Land Use Law
2. CIRP 5353. Environmental Law
3. URPA 5311. Social Policy Formation
4. URPA 5315. Urban Education Policy
5. URPA 5318. Social Welfare Policy
6. URPA 5341. Professional Report Writing
7. URPA 5358. Ethics in the Public Service
8. URPA 5363. Civil Rights and Urban Minorities
9. URPA 5366. US Immigration Policies and Planning for Immigrants

Emphasis Area 6: Organizational Analysis and Management

Objectives—upon completion of this emphasis track, students should be able to:
1. understand and diagnose the social dynamics within urban and non profit organizations;
2. acquire a professional command of participatory and strategic decision making techniques and processes.

Required courses:
1. URPA 5323. Public Organizational Change
2. URPA 5359. Organizational Diagnosis

Elective courses (select two):
1. CIRP 5363. Communication Skills in Planning and Management
2. URPA 5341. Professional Report Writing
3. URPA 5345. Evaluation Research
4. URPA 5353. Government Reform and Innovation or POLS 531 4-507. Topics in Public Administration and Policy Making: The Politics of Government Reform
5. URPA 5357. Strategic Planning and Management (also offered as CIRP 5312)
6. URPA 5358. Ethics in the Public Service
7. URPA 5361. International Organizations

Emphasis Area 7: Environmental Policy and Management

Objectives—upon completion of this emphasis track, students should be able to:
1. understand the political and policy landscape in which environmental decision making occurs and effectively synthesize knowledge of environmental politics, policy making, and management.
2. assist in drafting and evaluating environmental policies and advocate for policies that are effective, deliberative, and participatory.

Required courses:
1. CIRP 5342. Environmental Policy
2. URPA 5365 (CIRP 5343) Foundations of Environmental Policy

Elective courses (select two):
1. CIRP 5341. Environmental Regulations: Laws and Planning
2. CIRP 5350. Environmental Planning
3. CIRP 5351. Techniques of Environmental Assessment
4. CIRP 5353. Environmental Law
5. POLS 5314-502. Topics in Public Administration and Policy Making: Energy and Environmental Politics and Policy
6. URPA 5341. Professional Report Writing
7. URPA 5345. Evaluation Research
8. URPA 5358. Ethics in the Public Service

Emphasis Area 8: Economic Development and Planning

Objectives—upon completion of this emphasis track, students should be able to:
1. demonstrate a general comprehension of the politics, organization, policy issues and legal and financial dimensions of local economic development; and
2. demonstrate knowledge of techniques employed in location and impact analysis, strategic planning, revenue generation, marketing, cluster development, site planning, and business recruitment, development and retention.

Required courses:
1. CIRP 5322. Economic Development Planning and Policy
2. URPA 5334. Managing Economic Development

Elective courses (select two):
1. CIRP 5356. Introduction to GIS
2. URPA 5306. The Urban Economy
3. URPA 5307. Urban Geography
4. URPA 5309. Federalism and Intergovernmental Relations, URPA 5304. Urban Politics, or POLS 5314-505. Topics in Public Administration and Policy Making: State and Local Politics and Policies
5. URPA 5312. Economic Policy
6. URPA 5345. Evaluation Research
7. URPA 5341. Professional Report Writing
8. URPA 5358. Ethics in the Public Service

III. Internship (3 hours)

URPA 5360. Urban Management/Planning Internship, for students with less than one year of appropriate work experience (also offered as CIRP 5392).

IV. Capstone Project (3 hours)
URPA 5399. Public Administration Capstone

Online MPA Curriculum

Students who choose the MPA Online option will complete the following course work.

I. Core Courses (24 hours)
1. SUPA 5300. Foundations of Urban Planning and Sociology
2. SUPA 5301. Foundations of Urban Politics and Economics
3. SUPA 5302. Foundations of Urban Research and Analysis
4. URPA 5309. Federalism and Intergovernmental Relations or URPA 5304. Urban Politics
5. URPA 5320. Public Organization Theory
6. URPA 5322. Politics, Policy, and Public Administration
7. URPA 5326. Public Budgeting
8. URPA 5351. Human Resources

II. Emphasis Areas (12 hours)

Emphasis Area 1: Comparative and International Border Development (select four)
1. PAD 5355. Comparative Public Administration
2. PAD 5361. Political Economy of Borders
3. POLS 5331. Seminar in International Organizations and Law
4. POLS 5370. Seminar in Border Theory
5. URPA 5358. Ethics in the Public Service

Emphasis Area 2: Public Budgeting and Financial Management (select four)
1. URPA 5310. Urban Policy and the Law
2. URPA 5312. Economic Policy
3. URPA 5332. Capital Budgeting and Planning
4. URPA 5345. Evaluation Research
5. URPA 5358. Ethics in the Public Service

Emphasis Area 3: Decision Management and Research (select four)
1. URPA 5309. Federalism and Intergovernmental Relations or URPA 5304 Urban Politics
2. URPA 5310. Urban Policy and the Law
3. URPA 5312. Economic Policy
4. URPA 5345. Evaluation Research
5. URPA 5358. Ethics in the Public Service

III. Internship (3 hours)
URPA 5360. Urban Management/Planning Internship, for students with less than one year of appropriate work experience (also offered as CIRP 5392).

IV. Capstone Project (3 hours)
URPA 5399. Public Administration Capstone

Dual Degree Programs

Students in public administration may participate in one of five dual degree programs whereby they can earn a Master of Public Administration and 1) Master of Arts in Urban Affair 2) a Master of City and Regional Planning, 3) a Master of Science in Social Work, 4) a Master of Science in Nursing, 5) a Master of Arts in Criminal Justice, or 6) a Master's of Sociology. By participating in a dual degree program, students can apply a number of semester hours jointly to meet the requirements of both degrees, thus reducing the total number of hours which would be required to earn both degrees separately. The number of hours which may be jointly applied ranges from nine to 18 hours, subject to the approval of Graduate Advisors from both programs. To participate in the dual degree program, students must make separate application to each program and must submit a separate Program of Work for each degree. Those interested in the dual degree program should consult the appropriate Graduate Advisor(s) for further information on course requirements. See also the statement of Dual Degree Programs in the general information section of this catalog.

Certified Public Management Program

The Certified Public Management (CPM) Program is a nationally accredited program of seven courses offered over a 12-month period. Each course meets two days a month for two months. Courses cover such topics as personnel administration, quality management, organizational communication, public finance and budgeting, productivity, and information systems. The program has been endorsed by the American Society for Public Administration and has been approved for continuing education credit by the County Commissioners Education Committee, the Texas Commission on Law Enforcement Standards and Education, and the Texas State Board of Accountancy. Students completing the program may apply to have up to 6 hours of transfer credit applied to the Master of Public Administration.

Certificate in Urban Nonprofit Management

The Urban Nonprofit Management Certificate provides in-depth management training to nonprofit managers, staff, board members and volunteers to strengthen their management skills, administrative systems, and service delivery programs.

Students from any department or discipline may elect to complete the certificate program. Upon completion, students will be prepared to assume key roles in any nonprofit institution.

The certificate requires completion of URPA 5354 (Management of Nonprofit Organizations) and URPA 5355 (Nonprofit Institutions) as well as three additional courses to be selected by the student with approval of the Urban Nonprofit Management certificate program advisor. Examples of courses that would be approved include: URPA 5304 The Metroplex; URPA 5329 Financial Management in the Public and Nonprofit Sector; URPA 5351 Personnel and Human Resources in the Public Sector; URPA 5392 Entrepreneurial Management; CIRP 5319 Agencies of Planning and Administration or CIRP 5312 Strategic Planning and Management; CIRP 5324 Community Development or CIRP 5306 Urban Development; SOCW 5307 Introduction to Human Services Administration; SOCW 5303 Foundations of Social Policy and Services; MARK 5311 Marketing; MARK 5345 Creative Problem Solving.

Students who are already enrolled in a graduate degree program at UT Arlington need only declare their intent to enroll by submitting the appropriate application form to the Urban Nonprofit Management Graduate Advisor. No prerequisite requirements are essential for these students.

Students who desire only to enroll in the Urban Nonprofit Management Certificate program but NOT in a graduate degree program may apply for admission to UT Arlington as a special student or "non-degree seeking" student. An undergraduate degree and grade point average of 3.0 shall be required. A GRE (graduate record ex-

amination) score and letters of recommendation are not necessary for admission to the Urban Nonprofit Management Certificate program. Any student that later seeks a graduate degree in a UT Arlington college or school may apply nine hours of coursework toward that degree within six years of completion and award of the Urban Nonprofit Management Certificate and by petition to the Graduate School through her or his prospective academic department. The acceptance or waiver of the remaining six hours taken as part of the requirements for the award of the Urban Nonprofit Management Certificate is at the discretion of each department.

Graduate students in any degree program at UT Arlington may register for Urban Nonprofit Management courses using standard registration procedures. It should be noted that class slots in the two core courses would be reserved for all of those Urban Nonprofit Management Certificate program participants who are accepted. Urban Nonprofit Management program students who are enrolled in other academic schools or colleges must obtain written course approval from their respective graduate advisors.

Professionals who desire to enroll in any or both of the core courses for continuing education hours may do so as special students. If at a later date these students decide to apply for the Urban Nonprofit Management Certificate program, the hours already taken as continuing education will be applied (within six years of completion of the courses) to the certificate program requirements.

Graduate Certificate in Public Budgeting and Financial Management

Sound fiscal management at all levels of government is essential for meeting the demands of an increasingly expensive and complex service-delivery need. The purpose of this graduate certificate is provide students interested in public sector affairs and local government officials (budgeters, planners, finance analysts, and elected officials) with the skills to enable them to effectively support local government financial decision-making. Participants should expect to attain a comprehensive understanding of public budgeting and financial management practices and theories including knowledge of the various government revenue sources, major expenditures, and borrowing mechanisms used to finance long-life capital assets.

Students wishing to enroll only in the Graduate Certificate in Public Budgeting and Financial Management (certificate) but NOT to a graduate degree program may apply for admission to UT Arlington as a non-degree seeking student. A bachelor's degree with a GPA of 2.8 in the last 60 hours of undergraduate coursework is required for admission through the Graduate School. Students with GPAs lower than 2.8 may be recommended for admission by Alejandro Rodriguez, Ph.D., the Certificate Advisor, based on the following admission enhancing factors: (1) the applicant's work experience and level of responsibility; (2) undergraduate degree in economics, financial management, accounting, or other closely related field; and (3) two letters of recommendation.

Students already enrolled in a master's degree program at UT Arlington may enroll by submitting the appropriate application form to the program manager and his or her academic graduate advisor. Students who have completed a master's degree may apply for admission to UT Arlington as a non-degree seeking student. In either case, a minimum GPA of 3.0 in master's degree work is required.

Participants must satisfactorily complete three required core courses and two elective courses from an approved list of elective courses, or by permission of the program advisor. Students shall be awarded the Graduate Certificate for Public Budgeting and Financial Management by the School of Urban and Public Affairs and the Graduate School upon satisfactory completion of the certificate requirements and a grade point average of 3.0.

Core Courses (Required)
URPA 5326. Public Budgeting*
URPA 5332. Public Capital Budgeting and Planning*
URPA 5329. Financial Management in the Public and Non-Profit Sectors

Elective Courses – Students must take two of the following:
SUPA 5302. Fundamentals of Urban Research and Analysis*
URPA 5345. Evaluation Research*
URPA 5310. Urban Policy and the Law*
URPA 5312. Economic Policy*
URPA 5324. Urban Public Finance
URPA 5306. The Urban Economy
URPA 5392. Governmental and Non-for-Profit Accounting
CIRP 5322. Economic Development Planning and Policy
CIRP 5306. Urban Revitalization

*Courses also offered online

Students who later seek graduate degrees at UT Arlington may apply 12 hours of certificate coursework within six years of completion and award of the certificate, with approval of the appropriate Graduate Studies Committee and the Dean of the Graduate School. Non-degree seeking students in the certificate program desiring to seek a degree must meet all admission requirements of the degree program.

Interdepartmental and Intercampus Programs

Objective

The Engineering Management Program is offered as an interdisciplinary program that integrates engineering and business concepts. The curriculum prepares an experienced professional engineer or scientist for a leadership role in planning, developing and managing firm's technological resources including people, technology and processes. Graduates acquire an understanding how to use the technical base to accomplish the organization's operational, strategic and competitive objectives.

Admission

Applicants must hold a baccalaureate degree in science, mathematics, engineering or other appropriate field.

Unconditional Admission

Unconditional admission into the Engineering Management Program is granted if all of the following conditions are met.

- A GPA of at least 3.0 in the last 60 hours of undergraduate coursework or prior graduate work
- A minimum score of 550 on the GRE quantitative section and 350 on the GRE verbal section
- A minimum score of 500 on the handwritten TOEFL (213 on the computer-based version or 79 on the TOEFL iBT) if English is not the applicant's native language
- Adequate preparation in mathematics, science, and engineering or other appropriate field. Industrial experience is preferred.

Probationary Admission Criteria

Prospective students not meeting the conditions for unconditional admission may be granted probationary admission if their GPA is 2.6 or greater. Students granted probationary admission must maintain a GPA of at least 3.0 for the first 9 hours completed at UT Arlington. Other conditions, such as deficiency courses, may be specified by the Graduate Advisor.

Provisional Admission

An applicant unable to supply all required official documentation prior to the admission deadline, but whose available documentation otherwise appears to meet admission requirements may be granted provisional admission.

Deferral

The admission decision is deferred if insufficient information is available.

Denial

Prospective students with a GPA below 2.6 may be denied admission at the discretion of the Graduate Advisor. The Graduate Advisor may grant probationary admission if other factors suggest a potential for success in the graduate program.

Program in Engineering Management

ie.uta.edu/index.cfm

Area of Study and Degree

Engineering Management
M.S.

Master's Degree Plan

Non-Thesis

Graduate Advisor

D.H. Liles
420 Woolf Hall
817.272.3092

Graduate Faculty

The Graduate Faculty of the colleges of Business Administration and Engineering

Degree Requirements

The M.S. degree in Engineering Management requires 36 hours of coursework. The coursework is divided between the Department of Information Systems and Operations Management and the Department of Industrial and Manufacturing Systems Engineering. The program includes such courses as:

Accounting Analysis
Engineering Management
Engineering Economics
Management Sciences
Quality Management
Product Management
Project Management
Management of Knowledge and Technology
Simulation and Optimization
Technology Development and Deployment

Program in Interdisciplinary Studies

http://www.uta.edu/ints/academics/grad.php

Area of Study and Degrees

Interdisciplinary Studies
M.A., M.S.

Master's Degree Plans

Thesis, Thesis Substitute, Non-Thesis

Director

Allen F. Repko
209 University Hall
817.272.2338

Graduate Advisor

Allen F. Repko
209 University Hall
817.272.2338

Graduate Faculty

The Graduate Faculty of
The University of Texas at Arlington

Objective

The purpose of the graduate Interdisciplinary Studies (INTS) degree is to allow individuals to pursue studies in multiple disciplines, to upgrade their formal education in their fields of specialization, and to develop professional skills. INTS is primarily intended for persons who have developed careers or vocations since the baccalaureate degree and who have clearly articulated academic and professional goals.

Admission

The Interdisciplinary Studies (INTS) MA/MS program has temporarily suspended accepting new applications for admission or changes of program to enter INTS while the program structure and curriculum requirements are reevaluated. Students seeking readmission to the INTS program should consult the INTS Graduate Advisor before making application. Individuals currently admitted to the program will be able to continue to work toward their degrees. We anticipate accepting applications in the near future.

Interdisciplinary Studies (M.A. and M.S.) differs from other UT Arlington graduate programs in two ways: it is intended primarily for in-career professionals, and it stresses interdisciplinary curricula and scholarship. These differences are reflected in the admissions requirements for two items (see 2 and 3 below) not typically requested by other UT Arlington graduate programs. In reaching admissions decisions, all five criteria are considered together. No single factor will eliminate a prospective student from consideration.

In order for their applications to be processed, prospective students should submit all required materials and scores before Graduate School deadlines (i.e., official transcripts and GRE scores to the Graduate School, Professional Goal Statement, Tentative Program of Work, and recommendations to the Graduate Advisor/Coordinator).

Because of the differences between Interdisciplinary Studies and other graduate degree programs at UT Arlington and elsewhere, it is extremely important for prospective students to meet with the Graduate Advisor/Coordinator BEFORE submitting admissions materials.

Unconditional Admission

1. A minimum GPA of 3.0 for the last 60 hours of work toward the bachelor's degree.
2. A Professional Goal Statement: a short narrative that establishes a clear relationship between the applicant's academic and career goals and his or her Tentative Program of Work.
3. A Tentative Program of Work: a complete list of the applicant's intended courses to be taken. No more than half the courses may be in one discipline. The courses should clearly support the applicant's professional/academic goal.
4. Acceptable scores on the GRE. If the applicant's proposed Program of Work indicates a quantitative focus, the applicant would be expected to score a minimum of 500 on the quantitative portion. If the focus is verbal, the applicant would be expected to score a minimum of 500 on the verbal portion. For example, if the focus is interdisciplinary business administration and applicant submits a GMAT score, applicant would be expected to score a minimum of 500 and/or an equivalent percentile range of the GRE scores expected for the quantitative and verbal focuses.
5. Three letters of recommendation from former professors or, when appropriate, from professional supervisors.

Probationary Admission

If applicants meet any 4 of the 5 requirements for Unconditional Admission, then they can be granted Probationary Admission status. Students on academic probation must make no grade lower than a "B" in the first 12 hours of their graduate work in order to stay in the program.

Deficiency Courses

Applicants who went to pursue a graduate Interdisciplinary Studies degree, but do not have the necessary background to begin the course of study outlined in their Goals Statement and Program of Work, will be required to take from one to four undergraduate courses in which they can make no grade lower than a "B." These courses provide the necessary background for pursuing the graduate degree, but will not be counted for graduate degree.

Deferred Admission

If an applicant does not present adequate evidence of meeting requirements for Unconditional or Probationary Admission, the admission decision may be deferred. The applicant, in consultation with the Graduate Advisor/Coordinator, can resubmit revised material for reconsideration (for example, a rewritten Professional Goal Statement or improved GRE scores). To minimize the possibility of Deferred Admission and having to resubmit material, applicants should consult with the Graduate Advisor/Coordinator before applying. See the Graduate Catalog for more information on Deferred Admission.

Provisional Admission

Provisional admission to the graduate Interdisciplinary Studies program are rarely be granted. Applicants should submit all required materials before the deadline for admission.

Denial

Typically, failure to meet three or more of the requirements for Unconditional Admission will result in denial of admission.

M.A. and M.S. Degree Options

The INTS student may select from three program options: 1) The Thesis option requires 24 semester hours of courses, which includes INTS 5301 Interdisciplinary Process, at the beginning of program, and concludes with INTS 5698 Interdisciplinary Thesis 2) The Thesis Substitute option requires 30 semester hours of coursework which includes INTS 5301 Interdisciplinary Process at the beginning of the program, and concludes with INTS 5393 Interdisciplinary Thesis Substitute, followed by INTS 5193 Masters Comprehensive Examination 3) The Non-Thesis option requires 36 semester hours of coursework which includes the INTS 5301 Interdisciplinary Process at the beginning of the program, and concludes with INTS 5193 Master's Comprehensive Examination.

Degree Requirements

The Program of Work

The INTS program allows the student great flexibility in designing a Program of Work to meet specific professional and educational goals. Designing the Program of Work involves the following:

- Identifying coursework in a minimum of two disciplines
- Consulting with the graduate Academic Advisor (first) and the Advisors in disciplines from which the student plans to take two or more courses.
- Limiting the number of hours from a particular discipline to half of the hours (excluding INTS 5301) required by the program option chosen. For example, the Thesis Substitute option involving 30 hours of coursework limits the number of hours from a particular discipline to 15, whereas the limit is 18 in the Non-Thesis option. Note: This "50 Percent Rule" applies to all coursework taken in the College of Business.
- Including foundation or leveling courses, if required by an Academic Advisor, may be included in the Program of Work provided that these Graduate Foundation courses in the College of Business Administration are considered equivalent to advanced undergraduate courses and apply toward the nine-hour minimum.

There is no foreign language requirement. In appropriate cases, however, the Program Advisor may recommend , and/or the student's Graduate Committee may recommend, that proficiency be achieved in a foreign language other than English.

A maximum of nine hours of advanced undergraduate (Junior/Senior level) course work may be applied to a Program of Work provided that the following conditions are met:

- The course work is not "dated"
- The student earned grades of B or Better in each course
- The student's Advisors, particularly the Advisors in relevant disciplines, support the inclusion of these courses in the Program of Work

The Supervising Committee

The Dean of Graduate Studies will appoint for each master's student a supervising committee upon recommendation by the Graduate Advisor and the appropriate Committee on Graduate Studies. The committee will normally consist of at least three member of the student's program. One qualified external person who is not a member of graduate faculty may serve as voting member of a supervising committee following a request accompanied by documentation, such as a vita, from the appropriate Committee on Graduate Studies to the Dean of Graduate Studies and approved by Dean of Graduate Studies. The supervising committee conducts the final thesis examination for thesis degree plan candidates and determine scope, content, and form of the final master's comprehensive examination for thesis substitute and non-thesis plan candidates.

Preparing for Graduation

Students pursuing the Thesis Substitute and Non-Thesis options must enroll in INTS 5193 Master's Comprehensive Examinations, in order to graduate that semester.

At the beginning of the last semester, the student will submit two forms to the Chair of the student's committee for review and signature. (1) The application for the Master's Comprehensive Examination, and (2) the Report on the Master's Comprehensive Examination. Once signed by the Chair and committee members, the Application for the Master's Comprehensive Examination must be submitted to the Graduate Advisor for signature, then to the Chair of the Graduate Committee for signature, and then to the Dean of Graduate Studies. The Report on the Master's Comprehensive Examination must be submitted to the Graduate Advisor for processing.

Academic Policies

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Interdisciplinary Studies (INTS)

5193. MASTER'S COMPREHENSIVE EXAMINATION (1-0). Directed study, consultation, and comprehensive examination over coursework, leading to the Master's degree in Interdisciplinary Studies.

5393. THESIS SUBSTITUTE (3-0). In this independent study course the student must demonstrate the student's ability to integrate concepts from his or her major areas of coursework. Prerequisites: completion of 30 hours toward the INTS degree and, during the semester prior to enrollment, submission of a Thesis Substitute Proposal for approval by the instructor and the INTS Committee on Graduate Studies.

5398. THESIS (3-0). Research and preparation pertaining to the master's thesis.

5698. THESIS (6-0). Research and preparation pertaining to the master's thesis.

Program in Logistics

ie.uta.edu/index.cfm

Area of Study and Degree
Logistics
M.S.

Master's Degree Plan
Non-Thesis

Graduate Advisor
K. Jamie Rogers
420 Woolf Hall, 817.272.3092

Graduate Faculty
The Graduate Faculty of the colleges of Business Administration and Engineering

Objective

The Logistics Program is designed to meet an increasing state, national, and international demand for professionals with technical or business education and experience in the area of logistics and supply chain. Such professionals will need a unique combination of technical and business knowledge and skills and will have technical experience and degrees in engineering, mathematics or business.

Logistics is an interdisciplinary field of study which comprises the entire set of functions associated with the flow of goods, information, and payments among suppliers and consumers from organization of raw material to final recycling or disposal of finished goods. The integration of engineering and business content is done in a fashion that prepares an experienced professional engineer or manager for a leadership role in planning, developing, implementing and managing the firm's logistics and supply chain capabilities in the global marketplace. The overall purpose of the Logistics Program at UT Arlington is to provide graduates with the understanding needed to manage the firm's logistics and supply chain systems and infrastructure and to accomplish the organization's operational, strategic and competitive objectives.

Admission

Applicants must hold a baccalaureate degree in science, mathematics, engineering or other appropriate field.

Unconditional Admission

Unconditional admission into the M.S. Logistics program is granted if all of the following conditions are met.

- A GPA of at least 3.0 in the last 60 hours of undergraduate coursework or prior graduate work
- A minimum score of 550 on the GRE quantitative section and 350 on the GRE verbal section or 500 on the GMAT
- A minimum score of 3 on the GRE analytical writing section for GREs taken after October 2002.
- A minimum score of 500 on the handwritten TOEFL (213 on the computer-based version or 79 on the TOEFL iBT) if English is not the applicant's native language
- Adequate preparation in mathematics, science, and engineering or other appropriate field, and three years of experience

Probationary Admission Criteria

Prospective students not meeting the conditions for unconditional admission may be granted probationary admission if their GPA is 2.6 or greater. Students granted probationary admission must maintain a GPA of at least 3.0 for the first 9 hours completed at UT Arlington. Other conditions, such as deficiency courses, may be specified by the Graduate Advisor.

Provisional Admission

An applicant unable to supply all required official documentation prior to the admission deadline, but whose available documentation otherwise appears to meet admission requirements may be granted provisional admission.

Deferral

The admission decision is deferred if insufficient information is available.

Denial

Prospective students with a GPA below 2.6 may be denied admission at the discretion of the Graduate Advisor. The Graduate Advisor may grant probationary admission if other factors suggest a potential for success in the graduate program.

Degree Requirements

The M.S. degree in Logistics requires 36 hours of coursework. The coursework is divided between the Department of Industrial and Manufacturing Systems Engineering and the Department of Information Systems and Operations Management. The program includes such courses as:

Probability and Statistics
Operations Research
Production and Inventory Control
Production Systems Design
Enterprise Modeling
Logistics Information Systems
Logistics Transportation Systems Design
Logistics Distribution Systems Design
Business Logistics
Purchasing and Materials Management
Supply Chain Management Approved Electives

Department of Materials Science and Engineering

mse.uta.edu/

Area of Study and Degrees
Materials Science and Engineering
M.S., M.Engr., Ph.D.

Master's Degree Plans
Thesis (M.S.), Thesis Substitute (M.Engr.) and Non-Thesis (M.Engr.)

Chair
Efstathios Meletis
325 Woolf Hall
817.272.2398
meletis@uta.edu

Graduate Advisor
Choong-un Kim
325D Woolf Hall
817.272.5497
choongun@uta.edu

Graduate Faculty
Professors
Aswath, Chan, Elsenbaumer, Goolsby, Kim, Meletis

Assistant Professors
Hao, Jin, Koh

Objective

The graduate program in materials science and engineering is designed to provide students with a fundamental understanding of phenomena occurring in materials and their associated chemical, electrical, mechanical, and physical properties. The master's program prepares students for professional careers in materials science and engineering or for additional studies at the doctoral level.

Candidates for a master's or doctoral degree may elect programs emphasizing metals, polymers, ceramics, composite materials, or electronic materials, as well as a number of other areas. Although the program is administered through the College of Engineering, it is broadly interdisciplinary, actively involving faculty in both the College of Science and the College of Engineering. In addition to materials science and engineering courses, applicable courses are in the disciplines of aerospace engineering, biomedical engineering, chemistry, civil engineering, computer science engineering, electrical engineering, mechanical engineering, and physics.

Admission

Master's Degree

Applicants for the master's degree who hold a baccalaureate in engineering or science must meet the general requirements of the Graduate School as stated in the section of this catalog entitled "Admission Requirements and Procedures." Applicants not meeting all criteria may be admitted on a provisional or probationary basis.

For applicants with no prior training in engineering or with insufficient undergraduate materials coursework, the same minimum criteria will apply. Additionally, their records will be reviewed in relation to their materials backgrounds, and probationary status with specific remedial work required may be a basis for acceptance of such applicants.

The acceptance of applicants who hold a master's degree in engineering will be based on the above-mentioned minimum criteria and results of graduate work, including the master's thesis.

Doctoral Degree

Applicants for the doctoral degree must have either a baccalaureate or master's degree in engineering or science and meet all requirements stated above in both graduate and undergraduate work. Applicants who have completed a bachelor's degree wishing to pursue a doctoral degree without pursuing a master's degree may apply for admission in the B.S. to Ph.D. Track. The admission requirements to this highly competitive track are the same as those for all doctoral applicants. Doctoral candidates shall also demonstrate through previous academic preparation the potential to carry out independent research in materials science and engineering.

Admissions and Fellowships Criteria

The Materials Science and Engineering Program proposes the following guidelines for unconditional admission to our graduate programs. In evaluating candidates, the preparedness of the student as evidenced by quality and quantity of coursework and the student's previous research experience are emphasized. Recommendations from the MSE faculty, based on firsthand knowledge of the applicant or a faculty member at the applicant's institution, are also very important.

Unconditional Admission

Use any one of the following options. All options require a GPA of 3.0 in the last 60 hours of undergraduate work as calculated by the Graduate School.

Option 1

A satisfactory completion of a Bachelor's degree or equivalent, official transcripts, and GRE scores, and three letters of recommendation. An applicant whose native language is not English must submit a score of at least 550 on the paper-based TOEFL, a score of at least 213 on the computer-based TOEFL , a minimum score of 45 on the TSE-A, a minimum score of 6.5 on the IELTS, or a minimum TOEFL iBT total score of 79 with sectional scores that meet or exceed 22 for the writing section, 21 for the speaking section, 20 for the reading section, and 16 for the listening section.

Option 2

A satisfactory completion of a Bachelor's degree or equivalent, official transcripts, and a letter of recommendation from a faculty member at the applicant's undergraduate institution, plus a recommendation for a UT Arlington faculty member who participates in the Materials Science and Engineering Program. An applicant whose native language is not English must submit a score of at least 550 on the paper-based TOEFL, a score of at least 213 on the computer-based TOEFL , a minimum score of 45 on the TSE-A, a minimum score of 6.5 on the IELTS, or a minimum TOEFL iBT total score of 79 with sectional scores that meet or exceed 22 for the writing section, 21 for the speaking section, 20 for the reading section, and 16 for the listening section. Those who have completed their undergraduate education in English may be eligible for a TOEFL waiver based on the recommendation letters.

Option 3

A satisfactory completion of a Bachelor's degree or equivalent, official transcripts, and a letter of recommendation from a faculty member at the undergraduate institution, plus a recommendation from a UT Arlington faculty member who participates in the Materials Science and Engineering Program based on a face-to-face interview and/or direct e-mail contact.

Probationary Admission

In rare cases, probationary admission may be granted as the result of a substandard performance on the admission criteria. In this case, the Graduate Advisor will set additional conditions for admission including, but not limited to, additional undergraduate coursework and/or achieving a B or better in the first 12 hours of graduate coursework.

Provisional Admission

An applicant unable to supply all required documentation prior to the admission deadline but who otherwise appears to meet admission requirements may be granted provisional admission.

Deferred

A deferred decision may be granted when a file is incomplete or when a denied decision is not appropriate.

Denial of Admission

A candidate may be denied admission if they have less than satisfactory performance on a majority (3 or more) of the admission criteria described below:

1. GPA of 3.0 as determined by the graduate school.
2. GRE scores. (GRE scores of 400 Verbal and 650 Quantitative are typical of a successful masters applicant. GRE scores of 450 Verbal and 750 Quantitative are typical of a successful doctoral applicant.)
3. Letters of recommendations.
4. Relevance of the student's background (degree) with respect to MSE curriculum.
5. Reputation of the University where the student received his/her undergraduate or graduate education.

Eligibility for Scholarships/Fellowships

Students that are unconditionally admitted will be eligible for available scholarship and/or fellowship support. Award of scholarships or fellowships will be based on the following criteria:

1. The student is admitted with an unconditional status
2. Relative standing with respect to other qualified applicants

Continuation

The Materials Science and Engineering Graduate Program, in fulfillment of its responsibility to graduate highly qualified professional engineers and scientists, has established certain policies and procedures. In addition to the requirements of the Graduate School listed elsewhere in this catalog, to continue in the program each materials science and engineering graduate student must:

1. Maintain at least a B (3.0) overall GPA in all coursework, and
2. Demonstrate suitability for professional practice.

At such time as questions are raised by materials science and engineering graduate faculty regarding either of the above, the student will be notified and will be given the opportunity to respond to the Committee on Graduate Studies for Materials Science and Engineering. The Committee on Graduate Studies will review the student's performance and make a recommendation concerning the student's eligibility to continue in the program. Appeal of a decision on continuation may be made through normal procedures outlined in the section of this catalog entitled "Grievances Other than Grades."

Degree Requirements

Master's Degrees

Master of Science in Materials Science and Engineering: The Master of Science degree is a research-oriented degree in which completion of a thesis is mandatory. The program consists of a minimum of 24 credit hours of coursework (a minimum of 18 credit hours in MSE courses) and an acceptable thesis (minimum of six credit hours).

Master of Engineering in Materials Science and Engineering: The Master of Engineering degree is an engineering practice-oriented program requiring a minimum of 36 credit hours (A minimum of 24 credit hours of coursework must be in MSE courses.). A maximum of six hours may be a special project. A final program examination is required of all master's degree candidates. Non-thesis degree candidates will fulfill the program examination requirement upon the successful completion of MSE 5192, Master's Comprehensive Examination.

Candidates must enroll in MSE 5192 in the semester they intend to graduate.

The M.S. and M. Engr. degree programs require successful completion of three courses out of the following four core courses:

MSE 5304. Analysis of Materials
MSE 5405. Solid State Physics and Thermodynamics of Materials
MSE 5312. Mechanical Behavior of Materials
MSE 5321. Phase Transformations of Materials

B.S. to Ph.D. Track

In addition to the requirements listed below for the Ph.D. degree, a B.S.-Ph.D. Track student will be required to enroll in at least three hours of research each semester during the student's first two years, receiving a pass/fail grade (no R grade) in these hours. A B.S.-Ph.D. student must have a faculty research (dissertation) advisor prior to the start of the student's second full semester. A B.S.-Ph.D. student must take the Ph.D. diagnostic examinations prior to the start of the student's third full semester.

Doctor of Philosophy

The Ph.D. degree program involves an interdisciplinary and multidisciplinary approach which requires students to complete a set of Materials Science and Engineering core courses augmented by elective offerings in aerospace engineering, biomedical engineering, chemistry, civil engineering, electrical engineering, materials science, mechanical engineering and physics. The degree is a research degree which requires the candidate successfully to carry out independent research in an area acceptable to the Committee on Graduate Studies for Materials Science and Engineering. A student's research is directed by a faculty member from any of the departments or programs participating in the Materials Science and Engineering Program.

The Ph.D. degree program requires successful completion of the following curriculum components:

1. A minimum of 24 semester hours of graduate coursework is expected for students entering with an appropriate master's degree or, for highly qualified students, a minimum of 42 semester hours of graduate coursework is expected for student's entering with a bachelor's degree, as approved by the Committee on Graduate Studies for Materials Science and Engineering. Additional coursework may be required by the student's doctoral dissertation committee.
2. Four core courses or their equivalent are required for all doctoral students:
   MSE 5304. Analysis of Materials
   MSE 5405. Solid State Physics and Thermodynamics of Materials
   MSE 5312. Mechanical Behavior of Materials
   MSE 5321. Phase Transformations of Materials
3. One of these two courses is required for all doctoral students:
   MSE 5345. Ceramic Materials
   MSE 5347. Polymer Materials Science
4. Three of the following supplemental elective courses must be taken by all doctoral students, as approved by the Committee on Graduate Studies for Materials Science and Engineering.
   MSE 5310. Dislocation Theory
   MSE 5314. Fracture Mechanics
   MSE 5315. Fatigue of Engineering Materials
   MSE 5331. Ferroelectric Devices
   MSE 5333. Magnetic Properties of Materials
   MSE 5334. Optical Processes in Solid Materials
   MSE 5335. Integrated Circuit Materials and Processing
   MSE 5336. Electrical Properties of Materials
   MSE 5345. Ceramic Materials
   MSE 5346. Contemporary Polymer Chemistry
   MSE 5347. Polymer Materials Science
   MSE 5348. Fundamentals of Composites
   MSE 5349. Advanced Composites
   MSE 5351. Current Topics in Nanotechnology
   BME 5332D. Orthopedic Biomaterials
   BME 5335. Biological Materials, Mechanics and Processes
   BME 5361D. Biomaterials and Blood Compatibility
   CHEM 5309. Organic Chemistry I
   CHEM 5350. Advanced Polymer Chemistry
   CHEM 5461. Analytical Instrumentation
   CHEM 6305. Special Topics in Applied Chemistry
   EE 5340. Semiconductor Device Theory I
   EE 5343. Integrated Circuit Techniques
   EE 5349. Topics in Integrated Circuit Technology
   EE 6342. Advanced Quantum Devices
   ME 5312. Continuum Mechanics
   ME 5314. Fracture Mechanics in Structural Design
   ME 5339. Structural Aspects of Design
   PHYS 5316. Solid State II
   PHYS 6302. Methods of Applied Physics II Computers in Physics
5. Elective courses will be taken by all doctoral students which will allow specialization within a particular academic discipline. Graduate courses in chemistry, physics and engineering will be selected for this purpose in consultation with the student's research advisor, subject to approval by the Committee on Graduate Studies for Materials Science and Engineering.

After completion of the first year's coursework (i.e., core courses), students must satisfactorily complete diagnostic examinations which may be written or oral or written and oral with a supplemental interview with faculty members, as determined by the Committee on Graduate Studies in Materials Science and Engineering.

Upon completion of all or nearly all of the coursework requirements and after having demonstrated research ability through partial completion of dissertation research, a student must satisfactorily complete a comprehensive examination.

The dissertation research will be formulated in conjunction with the student's faculty research advisor who may be associated with any of the following academic disciplines participating in the Materials Science and Engineering Program: aerospace engineering, biomedical engineering, chemistry, civil engineering, electrical engineering, materials science, mechanical engineering, and physics. The dissertation research represents the culmination of the student's academic efforts and is expected to demonstrate original and independent research activity and be a significant contribution to knowledge in the field.

The grade of R (research in progress) is a permanent grade; completing course requirements in a later semester cannot change it. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of I) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded I. To receive credit for a course in which the student earned an I, the student must complete the course requirements. Enrolling again in the course in which an I was earned cannot change a grade of I. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour dissertation courses are graded R/F/W only (except social work thesis courses). The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six- or nine-hour dissertation courses and nine-hour thesis courses. In the course listings below, R-graded courses are designated either "Graded P/F/R" or "Graded R." Occasionally, the valid grades for a course change. Students should consult the appropriate Graduate Advisor or instructor for valid grade information for particular courses. (See also the sections titled "R" Grade, Credit for Research, Internship, Thesis or Dissertation Courses and Incomplete Grade in this catalog.)

Materials Science and Engineering (MSE)

5141. TRANSMISSION ELECTRON MICROSCOPY LAB (0-1). Specimen preparation. Operation of the transmission electron microscope. Beam alignment and rotation calibration. Bright field and dark field imaging. Weak beam imaging. Examination of defects.

5190. SPECIAL TOPICS IN MATERIALS SCIENCE AND ENGINEERING (1-0). May be repeated for credit when topic changes.

5191. ADVANCED STUDIES IN MATERIALS SCIENCE AND ENGINEERING (1-0). Topics selected from various areas of materials science and engineering. Work performed as a thesis substitute normally will be accomplished under the course number 5391, with prior approval of the Committee on Graduate Studies.

5192. MASTER'S COMPREHENSIVE EXAMINATION (1-0). Directed study, consultation, and comprehensive examination over coursework leading to the Master of Engineering degree in Materials Science and Engineering. Required of all Master of Engineering students in the semester they plan to graduate.

5193. SEMINAR IN MATERIALS SCIENCE AND ENGINEERING (1-0). Selected topics in materials science and engineering presented by faculty, students, and invited lecturers.

5290. SPECIAL TOPICS IN MATERIALS SCIENCE AND ENGINEERING (2-0). May be repeated for credit when topic changes.

5291. ADVANCED STUDIES IN MATERIALS SCIENCE AND ENGINEERING (2-0). Topics selected from various areas of materials science and engineering. Work performed as a thesis substitute normally will be accomplished under the course number 5391, with prior approval of the Committee on Graduate Studies.

5300. INTRODUCTION TO MATERIALS SCIENCE AND ENGINEERING (3-0). Physical, mechanical, electrical and chemical properties of metals, semiconductors, ceramics, polymers and composites, with an emphasis on understanding fundamental issues. Relationships between the processing, micro and macro structure of materials with their properties, such as strength ductility, toughness, fatigue and fracture and creep properties with special emphasis on mechanical properties of metals, polymers, ceramics and composites.

5304. ANALYSIS OF MATERIALS (2-3). Theoretical understandings and practical applications of various characterization techniques to materials analysis, ranging from x-rays and electron diffraction, x-ray spectroscopy, and surface topography, are discussed. Practice of these techniques in lab class typically includes SEM spectroscopy, powder diffraction, Laue diffraction, and the double crystal x-ray diffraction.

5310. DISLOCATION THEORY (3-0). Theory of dislocations and their reactions and interactions in crystalline materials developed and extended into a basic understanding of mechanical properties of crystalline materials.

5312. MECHANICAL BEHAVIOR OF MATERIALS (3-0). Concepts of stress and strain, theory of plasticity. Elementary dislocation theory. Deformation of single crystals. Strengthening mechanisms like solid solution strengthening, precipitation hardening, etc. Elementary concepts in fracture mechanics. Microscopic aspects of fracture, fatigue, and creep of materials.

5314. FRACTURE MECHANICS (3-0). Theory and applications of linear elastic fracture mechanics. Topics include stress analysis of cracks, crack-tip plasticity, fatigue and stress corrosion. Applicability to materials selection, failure analysis and structural reliability reviewed.

5315. FATIGUE OF ENGINEERING MATERIALS (3-0). Cyclic deformation, fatigue crack initiation and growth in ductile solids. Application of fracture mechanics to fatigue. Mechanisms of crack closure. Variable and multiaxial fatigue and corrosion fatigue. Fatigue of brittle solids.

5321. PHASE TRANSFORMATIONS OF MATERIALS (3-0). The theory of homogeneous and heterogeneous transformations, nucleation and growth, martensitic transformations, heat treatment and control of microstructure.

5330. CORROSION (3-0). Quantitative application of electrochemical principles to corrosion reactions. Effects of metallurgical factors and environmental conditions on oxidation, erosion, and cracking discussed along with materials selection.

5331. FERROELECTRIC DEVICES (2-3). Crystallography and its relation to ferroelectrics, effects of crystal symmetry on crystal properties, isotropic and anisotropic properties, matrix and tensor representation of physical properties, transformation of axes, principal axes of tensor, crystal properties in matrix notation, matrix method, electrostatics, thermodynamics of electrification, origin of spontaneous polarization, ferroelectric materials, fabrication of ceramics and in depth discussion of representative ferroelectric, electrostrictive, dielectric and piezoelectric devices. Fabrication and characterization of piezoelectric actuator. Prerequisite: permission of instructor.

5333. MAGNETIC PROPERTIES OF MATERIALS (3-0). Classical and quantum mechanical understandings of magnetic properties of materials. Specific applications of these properties to various devices are discussed. Prerequisite: MSE 5405 or permission of instructor.

5334. OPTICAL PROCESSES IN SOLID MATERIALS (3-0). Basic understanding of optical response of materials based on classical and quantum models. Particular focus on all phenomena involving light in semiconductors and their optoelectronic applications. Optical properties of solid materials with reduced dimensionality such as thin films and quantum wells and dots. Prerequisite: MSE 5405 or permission of instructor.

5336. ELECTRICAL PROPERTIES OF MATERIALS (3-0). Advanced discussion of electronic structure, transport mechanisms in metals, semiconductors and superconductors, with applications to materials used in various electronic devices.

5341. TRANSMISSION ELECTRON MICROSCOPY IN MATERIALS SCIENCE (3-0). Crystallography, stereographic projections, and reciprocal lattice. Specimen preparation in transmission electron microscopy. Dynamical and kinematical theories of electron diffraction. Interpretation of diffraction patterns and transmission electron micrographs. Use of the transmission electron microscope.

5345. CERAMIC MATERIALS (3-0). Crystal structure of ceramic materials. Phase equilibria in ceramic materials. The processing of ceramics and ceramic matrix composites. Strengthening mechanisms and mechanical properties of ceramics and ceramic matrix composites including flexure, tensile, fracture toughness, fatigue, and creep.

5346. ADVANCED POLYMER CHEMISTRY (3-0). Polymer synthesis and reactions including condensation, free-radical, ionic, and coordination polymerizations; principles of polymerization including thermodynamics and kinetic considerations; physical characterizations including determinations of absolute molecular weights, relative molecular weights, morphology, glass transitions, and polymer crystallinity; relationships between macromolecular structure, properties, and uses of polymeric materials. Also offered as MSE 5346. Prerequisite: CHEM 2321 and 2322 or permission of instructor.

5347. POLYMER MATERIALS SCIENCE (3-0). Intermolecular forces of attraction in high polymers, polymer synthesis, morphology and order in crystalline polymers, mechanics of amorphous polymers, time-dependent mechanical behavior, transitional phenomena, mechanical behavior of semicrystalline polymers.

5348. FUNDAMENTALS OF COMPOSITES (3-0). Fundamental relationships between the mechanical behavior and the composition of multiphase media; failure criteria discussed. Offered as AE 5315, ME 5348, and MSE 5348. Credit will be granted only once.

5349. ADVANCED COMPOSITES (3-0). Review of current state-of-the-art applications of composites: composite structural analysis; structural properties, damage characterization and failure mechanisms; stiffness loss due to damage, notched sensitivity; delamination; impact; fatigue characteristics; composite material testing; material allowables; characteristics of composite joints. Also offered as ME 5349 and MSE 5349. Credit will be granted only once. Prerequisite: ME 5348 or MSE 5348 or AE 5315 or consent of the instructor.

5351. CURRENT TOPICS IN NANOTECHNOLOGY (3-0). Review and discussion of the latest advances in the field of nanoscale science and technology. Topics include molecular electronics, chemical and biological sensors, synthesis of nanoscale materials, carbon nanotubes, nanowires, nanoparticles, atom-wires, self-assembled monolayers, nanoscale composite materials and techniques for observing and manipulating atoms and molecules. Prerequisite: permission of instructor.

5390. SPECIAL TOPICS IN MATERIALS SCIENCE AND ENGINEERING (3-0). May be repeated for credit when topic changes.

5391. ADVANCED STUDIES IN MATERIALS SCIENCE AND ENGINEERING (3-0). Topics selected from various areas of materials science and engineering. Work performed as a thesis substitute normally will be accomplished under the course number 5391, with prior approval of the Committee on Graduate Studies.

5398. THESIS (3-0).

5405. PHYS THERMO MAT (3-0).

5698. THESIS (6-0).

5998. THESIS (0-0).

6196. MSE INTERNSHIP (1-0). For students participating in internship programs. May be repeated for credit.

6197. ADVANCED STUDIES IN MATERIALS SCIENCE AND ENGINEERING (1-0). May be repeated for credit.

6198. RESEARCH IN MATERIALS SCIENCE AND ENGINEERING (1-0). Individually approved research projects in materials science and engineering. May be repeated for credit.

6298. RESEARCH IN MATERIALS SCIENCE AND ENGINEERING (2-0). Individually approved research projects in materials science and engineering. May be repeated for credit.

6396. MSE INTERNSHIP (3-0). For students participating in internship programs. May be repeated for credit.

6397. ADVANCED STUDIES IN MATERIALS SCIENCE AND ENGINEERING (3-0). May be repeated for credit.

6398. RESEARCH IN MATERIALS SCIENCE AND ENGINEERING (3-0). Individually approved research projects in materials science and engineering. May be repeated for credit.

6399. DISSERTATION (3-0).

6696. MSE INTERNSHIP (6-0). For students participating in internship programs. May be repeated for credit.

6698. RESEARCH IN MATERIALS SCIENCE AND ENGINEERING (6-0). Individually approved research projects in materials science and engineering. May be repeated for credit.

6699. DISSERTATION (6-0).

6996. MSE INTERNSHIP (9-0). For students participating in internship programs. May be repeated for credit.

6998. RESEARCH IN MATERIALS SCIENCE AND ENGINEERING (9-0). Individually approved research projects in materials science and engineering. May be repeated for credit.

6999. DISSERTATION (9-0).

Graduate Faculty

(Year in parentheses indicates year of initial employment to the faculty of The University of Texas at Arlington.)

ABOLMAALI, SEYEDALI, Associate Professor - Civil Engineering (2001). B.S., University of Oklahoma, 1980; M.S., 1984; Ph.D., 1999.

ADAM, THOMAS, Assistant Professor - History (2001). M.A., University of Leipzig, 1994; Ph.D., 1998.

ADAMS, PHYLLIS, Associate Clinical Professor - Nursing (1995). B.S.N., Dillard University, 1969; M.S.N., Ohio State University, 1972; Ed.D., Texas Southern University, 1989.

AGGER, BEN, Professor - Sociology and Anthropology (1994). B.A., York University, 1973; M.A., 1974; Ph.D., University of Toronto, 1976.

AGONAFER, DEREJE, Professor - Mechanical and Aerospace Engineering (1999). B.S., University of Colorado, 1972; M.S., Howard University, 1978; Ph.D., 1984.

AHMAD, ISHFAQ, Professor - Computer Science and Engineering (2002). B.S.E.E., University of Engineering and Technology, Lahore, Pakistan, 1985; M.S., Syracuse University, 1987; Ph.D., 1992.

AHRENS, JANE C., Assistant Professor - Architecture (2003). B.S., Central Connecticut State University, 1992; M.Arch., The University of Texas at Arlington, 1997.

AKTOSUN, TUNCAY, Professor - Mathematics (2005). B.S., Middle East Technical Institute University, Turkey, 1978; M.S., Indiana University, 1981; Ph.D., 1986.

ALAIMO, STACY, Associate Professor - English (1994). B.A., Gustavus Adolphus College, 1985; M.A., University of Wisconsin, 1986; Ph.D., University of Illinois, 1994.

ALAVI, KAMBIZ, Professor - Electrical Engineering (1988). B.S., Massachusetts Institute of Technology, 1972; M.S., 1977; Ph.D., 1981.

ALEXANDRAKIS, GEORGE, Assistant Professor - Bioengineering (2006). B.Sc., Oxford University, 1992; M.Sc., McMaster University, 1996; Ph.D., 2000.

AMACHER, RYAN C., Professor - Economics (1992). A.B., Ripon College, 1967; Ph.D., University of Virginia, 1971.

AMBARTSOUMIAN, GAIK, Assistant Professor - Mathematics (2006). M.S., Obninsk Institute of Nuclear Power Engineering, Russia, 2001; Ph.D., Texas A & M University, 2006.

ANDERSON, ANTHONY, Professor - Art and Art History (1991). B.A., Florida State University, 1968; M.A., Florida State University, 1971.

ANDERSON, CHERYL, Associate Professor - Nursing (1991). Diploma in Nursing, Scott & White Memorial Hospital School of Nursing, 1969; B.S., San Diego State University, 1974; M.N., University of California at Los Angeles, 1976; Ph.D., Texas Woman's University, 1985.

ANDERSON, MICHAEL A., Assistant Professor - Educational Leadership (2004). B.A., The University of Texas at El Paso, 1982; M.A., Texas A&M University, 1986; Ph.D., 1999.

ANDERSON, MINDI, Assistant Clinical Professor - Nursing (2000). B.S.N., Texas Christian University, 1993; M.S.N., The University of Texas at Arlington, 1997; Ph.D., Texas Woman's University, 2007.

ANDRESEN, EARL, Professor - Communication (1991). A.B., Columbia College, 1969; A.M., University of Illinois, 1972; Ph.D., Texas A&M University, 1988.

ANDREWS, CARLY, Graduate Accounting Advisor - Accounting, B.B.A., Baylor University, 1997; M.B.A., The University of Texas at Arlington, 2001.

ANJOMANI, ARDESHIR, Professor - Urban and Public Affairs (1979). M.Arch., University of Tehran, Iran, 1968; M. Planning, University of Southern California, 1976; Ph.D., 1979.

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Index