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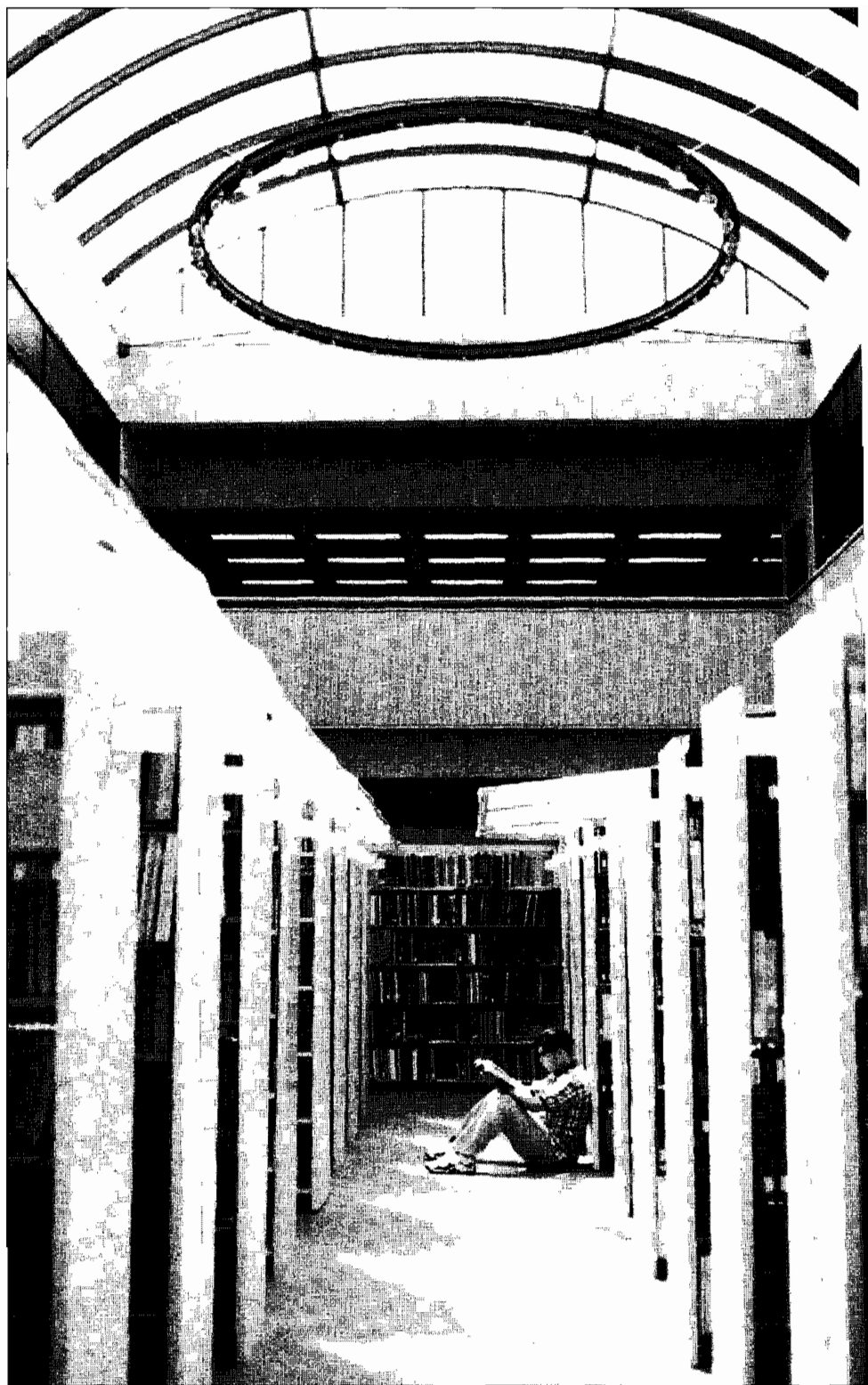
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1.
CALENDAR AND
INFORMATION



CALENDAR AND INFORMATION

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GRADUATE *FALL SEMESTER 1999

January 1, 1999	Friday. Deadline for international doctoral applicants to apply for admission and provide supporting documents for Fall 1999.
February 1, 1999	Monday. Deadline for doctoral applicants to apply for admission and provide supporting documents for Fall 1999.
April 12–August 23	Registration.
June 1	Tuesday. Deadline for international master's applicants to apply for admission and provide supporting documents.
June 15	Tuesday. Deadline to file Petition for Reinstatement for students who have been academically dismissed.
July 1	Thursday. Deadline for master's applicants to apply for admission and provide supporting documents.
August 30	Monday. Classes begin.
September 6	Monday. Labor Day Holiday.
September 15	Wednesday. Census Date. Last day to: drop an individual course or withdraw from all classes without a grade; drop a class and receive a refund. Deadline for degree candidates to apply for graduation.
October 29	Friday. Last day to drop an individual course or withdraw from all classes and receive an automatic grade of "W."
November 25–27	Thursday–Saturday. Thanksgiving Holidays.
December 6	Monday. Last day to withdraw from all classes.
December 11–17	Saturday–Friday. Final examinations.
January 1, 2000	Saturday. Deadline for international doctoral applicants to apply for admission and provide supporting documents for Fall 2000.
February 1, 2000	Tuesday. Deadline for doctoral applicants to apply for admission and provide supporting documents for Fall 2000.

*SPRING SEMESTER 2000

October 15, 1999	Friday. Deadline for international master's applicants to apply for admission and provide supporting documents. Deadline to file Petition for Reinstatement for students who have been academically dismissed.
November 8–	Registration.
January 10	
December 1, 1999	Wednesday. Deadline for master's applicants to apply for admission and provide supporting documents.
January 17	Monday. Martin Luther King, Jr. Holiday.
January 18	Tuesday. Classes begin.
February 1	Tuesday. Deadline for degree candidates to apply for graduation.

*For the most current and detailed calendar of semester events, refer to the Schedule of Classes for each semester.

February 2	Wednesday. Census Date. Last day to: drop an individual course or withdraw from all classes without a grade; drop a class and receive a refund.
March 17	Friday. Last day to drop an individual course or withdraw from all classes and receive an automatic grade of "W."
March 13–18	Monday–Saturday. Spring Break.
May 1	Monday. Last day to withdraw from all classes.
May 6–12	Saturday–Friday. Final examinations.

*SUMMER SEMESTER 2000

March 1	Wednesday. Deadline for international master's applicants to apply for admission and provide supporting documents for the Summer Semester.
March 15	Wednesday. Deadline to file Petition for Reinstatement for students who have been academically dismissed.
April 10–May 24	Registration for all summer terms.
May 1	Monday. Deadline for master's applicants to apply for admission and provide supporting documents for the Summer Semester.
May 31	Wednesday. Classes begin for the first five-week and 10-week terms
June 5	Monday. Census Date. Last day in Summer Term I to drop an individual course or withdraw from all classes without a grade or drop a class and receive a refund.
June 15	Thursday. Deadline for degree candidates to apply for graduation.
June 20	Tuesday. Last day for students enrolled in the first five-week term to drop an individual course or withdraw from all classes and receive an automatic grade of "W."
June 27	Tuesday. Last day to withdraw from all classes for the first five-week term.
July 3 and 5	Monday and Wednesday. Final examinations for courses in the first five-week term.
July 4	Tuesday. Independence Day Holiday.
July 6	Thursday. Classes begin for the second five-week term.
July 11	Tuesday. Census Date. Last day in the second five-week term to drop an individual course or withdraw from all classes without a grade; drop a class and receive a refund.
July 12	Wednesday. Last day for students enrolled in the 10-week term to drop an individual course or withdraw from all classes and receive an automatic grade of "W."
July 26	Wednesday. Last day for students enrolled in the second five-week term to drop an individual course or withdraw from all classes and receive an automatic grade of "W."
August 1	Tuesday. Last day to withdraw from all classes for the 10-week and second five-week terms.
August 8–9	Tuesday–Wednesday. Final examinations for courses in the 10-week and second five-week terms.

*For the most current and detailed calendar of semester events, refer to the Schedule of Classes for each semester.

***FALL SEMESTER 2000**

January 1, 2000	Saturday. Deadline for international doctoral applicants to apply for admission and provide supporting documents for Fall 2000.
February 1, 2000	Tuesday. Deadline for doctoral applicants to apply for admission and provide supporting documents for Fall 2000.
June 1	Thursday. Deadline for international master's applicants to apply for admission and provide supporting documents for Fall 2000.
June 15	Thursday. Deadline to file Petition for Reinstatement for students who have been academically dismissed.
April 1–August 21	Registration.
July 1	Saturday. Deadline for master's applicants to apply for admission and provide supporting documents.
August 28	Monday. Classes begin.
September 4	Monday. Labor Day holiday.
September 13	Wednesday. Census Date. Last day to: drop an individual course or withdraw from all classes without a grade; drop a class and receive a refund.
September 15	Friday. Deadline for degree candidates to apply for graduation.
October 27	Friday. Last day to drop an individual course or withdraw from all classes and receive an automatic grade of "W."
November 23–25	Thursday–Saturday. Thanksgiving Holidays.
December 4	Monday. Last day to withdraw from all classes.
December 9–15	Saturday–Friday. Final examinations.
January 1, 2001	Monday. Deadline for international doctoral applicants to apply for admission and provide supporting documents for Fall 2001.
February 1, 2001	Thursday. Deadline for doctoral applicants to apply for admission and provide supporting documents for Fall 2001.

SPRING AND SUMMER SEMESTERS 2001

Calendar information is not available for these semesters at the time of catalog printing.

*For the most current and detailed calendar of semester events, refer to the Schedule of Classes for each semester.

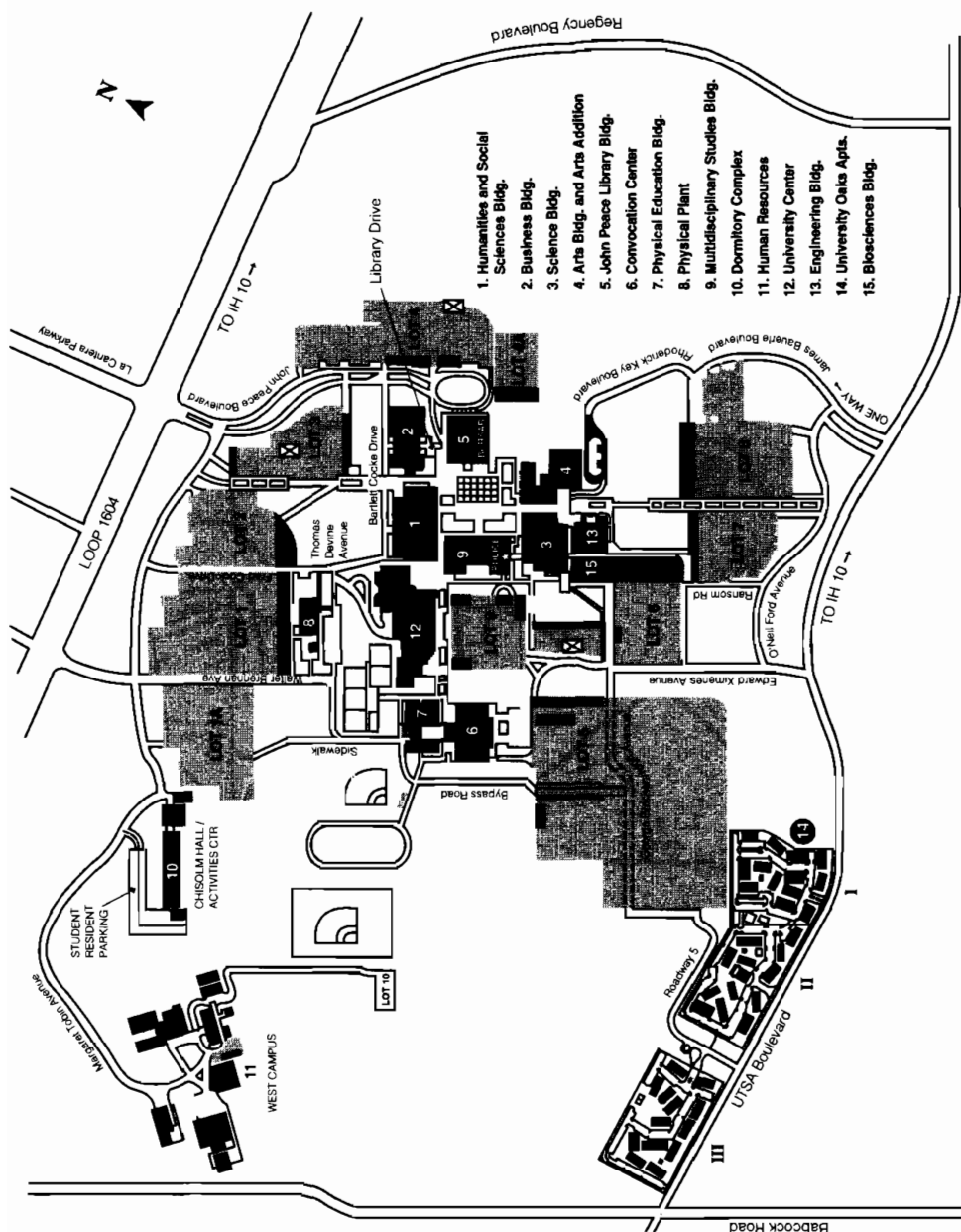
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Requests for information should be directed to the offices shown below. The University's address is The University of Texas at San Antonio, 6900 North Loop 1604 West, San Antonio, TX 78249. The main telephone number of UTSA is (210) 458-4011.

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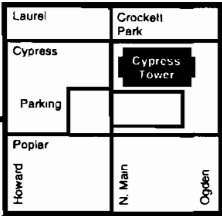
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Transfer of Credit	Registrar
Transcripts	Registrar
Veterans Certification	Registrar
Withdrawal from University	Registrar

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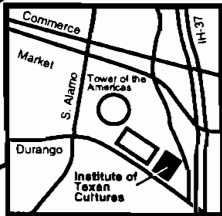




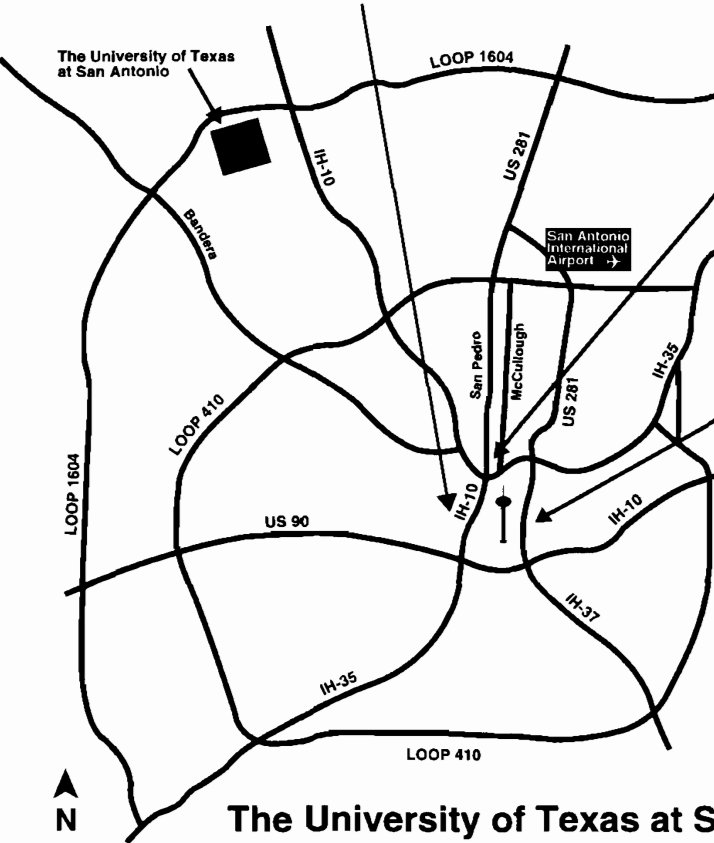
UTSA Downtown Campus



UTSA Downtown



Institute of Texan Cultures



**The University of Texas at San Antonio
Map of Campus Sites**

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2. ABOUT UTSA



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HISTORY, MISSION, AND ORGANIZATION

History

UTSA celebrated its 25th anniversary in 1994. It was created by a mandate from the 61st Texas Legislature on June 5, 1969, to be a university of the first class offering bachelor's, master's, and doctoral degrees "as are customarily offered at leading American universities." The first class of 671 graduate students was admitted in June 1973; upper-division undergraduates were admitted in September 1975; and lower-division undergraduates were admitted in June 1976. The first commencement ceremony was in August 1974. The UTSA Alumni Association was formed in 1978.

UTSA received full accreditation by the Southern Association of Colleges and Schools in December 1976. UTSA's first endowed professorship was established in 1981 in the life sciences. The first endowed chair was established in 1985 in the College of Business. The UTSA Honors Program was initiated in September 1985.

UTSA now has 50 undergraduate degree programs, 33 master's degree programs, and three doctoral degree programs. With the support of the South Texas Border Initiative, UTSA will introduce several new programs at each level during the next few years.

Ninety-eight percent of tenured and tenure-track faculty hold a doctorate or terminal degree in their fields. Forty-one UTSA faculty have won Fulbright Fellowships to teach and conduct research in a foreign country. UTSA is in the top 30 percent of public universities in the state in research expenditures.

UTSA is one of the fastest-growing universities in the state. The Fall 1998 enrollment was 18,397, and it is projected to reach over 20,000 by the year 2000. UTSA's growth in Hispanic students places it in the top nine of all Hispanic-serving public universities in the continental United States.

Space on campus now totals almost 2 million square feet. A Wellness Center and a third building at the UTSA Downtown Campus are being constructed, and plans are under way for an additional academic building.

Mission

UTSA, a comprehensive public metropolitan university, is committed to freedom of inquiry and the creation of an environment in which people can teach, discover, learn, and enrich themselves and their community. Through its instructional, research, and public service programs, UTSA seeks to fulfill its mission, serve the needs of the multicultural population of San Antonio and the South Texas region, and emphasize programs that contribute to the technological, economic, and cultural development of the city, region, and state.

UTSA is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award bachelor's, master's, and doctoral degrees. The University offers a range of academic programs leading to the bachelor's and master's degrees as well as doctoral degree programs in Neurobiology, Computer Science, and

Educational Leadership. It also seeks to offer other appropriate doctoral programs in selected fields. The University offers students the knowledge and skills required to succeed in their chosen fields.

UTSA provides access to its various degree programs to a broad constituency at multiple sites and maintains rigorous academic standards in requirements for successful completion of its programs. Through flexible scheduling, varied course offerings, and student support services, UTSA encourages attendance by both traditional and nontraditional students.

UTSA emphasizes a balance of excellent teaching, research and creative activities, and scholarship. To this end, UTSA recruits and retains faculty who exemplify this balance and encourages faculty to engage in public service activities appropriate to their academic fields. UTSA encourages and facilitates multidisciplinary instructional, research, and public service efforts through its administrative structure, degree programs, and personnel policies.

Through its broad research efforts, UTSA both creates new knowledge through basic research and applies that knowledge to today's problems through applied research. UTSA seeks to facilitate the transfer of research findings into the work environment through continuing education and graduate-level programs for maintaining and upgrading specialized skills of professionals employed in San Antonio and the South Texas region.

UTSA seeks to enrich the cultural environment of the University and the community through its fine arts and humanities programming.

Organization

UTSA is a component institution of The University of Texas System. Governance of the University is vested in the nine-member Board of Regents of The University of Texas System, whose members are appointed biennially by the Governor, with the advice and consent of the Senate, for six-year, staggered terms.

The Board of Regents delegates administrative authority to the Chancellor of The University of Texas System. The administrative authority of each component institution, such as UTSA, is in turn delegated to the President of that component.

The President at UTSA is assisted by a staff including a Provost and Vice President for Academic Affairs, a Vice President for Business Affairs, a Vice President for Student Affairs, a Vice President for University Advancement, and an Executive Director of the Institute of Texan Cultures.

The Provost and Vice President for Academic Affairs provides the President with advice and counsel on academic matters, acts as a liaison between the Office of the President and faculty committees concerned with academic affairs, and has direct responsibility for the development, administration, and quality of academic programs, the administration of the academic budget, development and implementation of academic policy, and matters directly affecting faculty. The Associate Provost for the UTSA Downtown Campus has the responsibility for coordinating the development and delivery of the University's academic program at the UTSA Downtown Campus.

The Vice President for Extended Education has responsibility for development of UTSA's extended education programs and for the University's business assistance centers.

The Vice President for Business Affairs provides the President with advice and counsel on fiscal affairs and has direct responsibility for the business operation of the University, including operation of the Physical Plant, Information Technology, University Police, Materials Management, the Business Manager's Office, and Institutional Analysis. This officer is also responsible for budget preparation and analysis, contract and grant administration, and personnel administration.

The Vice President for Student Affairs is responsible for overseeing student affairs and enrollment and management and for providing advice to top administrators on all aspects of student activities at UTSA.

The Vice President for University Advancement is responsible for all areas of advancement, including development, communications, and alumni affairs within the academic colleges and coordination with the University of Texas Institute of Texan Cultures.

The Executive Director of the Institute of Texan Cultures is responsible for the administration and management of all institute programs, activities, and exhibits; leadership in educational programming and content production; dissemination of historical and cultural information to the public and the schools; development and management of volunteer programs; and fund-raising.

UTSA Downtown Campus

The UTSA Downtown Campus has been in operation since January 1994 at its temporary Cypress Tower location and since 1997 at its permanent site on Durango Boulevard. Its mission is to offer bachelor's and master's degree programs in historically underserved areas; provide professional development and career advancement for adult learners; identify solutions for rapidly changing public sector needs; provide management and technical assistance for business entrepreneurs; foster expansion of the region's economic infrastructure; support technological and international growth; provide research and service to support teachers and transform schools; conduct public policy research; foster urban design creativity; and enhance cultural enrichment opportunities.

The Downtown Campus offers the Core Curriculum and programs or components of programs leading to bachelor's and master's degrees in a variety of fields. A range of undergraduate and graduate courses are provided in the humanities, social and behavioral sciences, education, and business.

Accreditation

The University of Texas at San Antonio is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award bachelor's, master's, and doctoral degrees.

Graduate Council

The Graduate Council at The University of Texas at San Antonio is an operating unit of the Faculty Senate, with representation developed independently of the Senate. The council recommends graduate program policies and monitors their implementation across graduate programs and by the various graduate studies committees. Specific functions include developing recommendations concerning content of disciplinary and interdisciplinary programs and graduate curricula for existing graduate degrees and the establishment of new graduate degree programs; recommending and reviewing all graduate courses of instruction at UTSA; reviewing graduate programs and monitoring their quality; and recommending policies and standards for appointment of graduate students to be teaching assistants, teaching associates, research assistants, and recipients of university fellowships.

Members are elected to the Graduate Council by the members of each graduate studies committee, and from members of the graduate faculty of the programs' graduate studies committees. The Dean of Graduate Studies and Associate Vice President for Research and the Director of Libraries serve as ex officio members. A student representative to the Graduate Council from each college is elected by the members of the graduate faculty in each college, and from these representatives one student is elected to represent the council on the University Assembly.

ADMINISTRATIVE POLICIES AND SERVICES

Rules and Regulations of the Board of Regents

A student at UTSA neither loses the rights nor escapes the responsibilities of citizenship. Compliance is expected with both the penal and civil statutes of the state and federal governments, the *Rules and Regulations of the Board of Regents of The University of Texas System*, and the policies and procedures of the University.

All students of UTSA are subject to the rules and regulations governing student conduct and discipline as set out in Part One, Chapter VI of the *Rules and Regulations of the Board of Regents of The University of Texas System*, the *UTSA Handbook of Operating Procedures*, and the *Student Guide to UTSA* (pp. 24–28).

The *Rules and Regulations of the Board of Regents*, the *Handbook of Operating Procedures*, and the *Student Guide to UTSA* have full force and effect as they concern all UTSA students. The *Rules and Regulations of the Board of Regents* and the *Handbook of Operating Procedures* may be consulted in the offices of the President, the Vice Presidents, and the Deans and in the UTSA Library. The *Student Guide to UTSA* is available from the Office of the Associate Vice President for Student Life.

To the extent provided by applicable law, no person shall be excluded from participation in, denied the benefits of, or be subject to discrimination under any program or activity sponsored or conducted by The University of Texas System or any of its component institutions on the basis of race, color, national origin, religion, sex, age, veteran status, or disability (*Rules and Regulations of the Board of Regents*, Part Two, Chapter I, Sec. 6; *UTSA Handbook of Operating Procedures*, Chapter 9.91). Students can

notify the University of any violations of this policy by contacting the Office of Student Life (458-4720) or the Affirmative Action Office (458-4105).

Hazing

State law (§§ 37.151 through 37.157, Texas Education Code) defines hazing as “any 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 a 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, electric 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 a student to any 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 or 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 such acts
- any activity that induces, causes, or requires the student to perform a duty or task that involves a violation of the Penal Code.

Under state law, individuals or organizations engaging in hazing could be subject to fines and charged with a criminal offense. According to the statute, a person can commit a hazing offense

- by engaging in a hazing activity
- by soliciting, directing, encouraging, aiding, or attempting to aid another in hazing
- by intentionally, knowingly, or recklessly allowing hazing to occur
- by failing to report in writing to the Associate Vice President for Student Life firsthand knowledge that a hazing incident is planned or has occurred.

The fact that a person consented to or acquiesced in a hazing activity is not a defense under the hazing law.

The penalty for failure to report hazing activities 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; they include fines from \$500 to \$10,000 and/or up to two years in jail.

In an effort 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 Associate Vice President for Student Life, and immunizes that person from participation in any judicial proceeding resulting from that report.

State law does not affect or in any way restrict the right of UTSA to enforce its own rules against hazing, and the University may take disciplinary action for conduct that constitutes hazing regardless of whether public authorities prosecute students under state law. Part One, Chapter VI, § 3.28 of the *Rules and Regulations of the Board of Regents* provides that hazing with or without the consent of the student is prohibited by the System and a violation of that prohibition renders both the person inflicting the hazing and the person submitting to the hazing subject to discipline. Initiations or activities by organizations may include no feature that is dangerous, harmful, or degrading to a student, and a violation of this prohibition renders both the organization and the participating individuals subject to discipline.

Solicitation and Distribution of Materials

No individual, group, association, or corporation may use the grounds, buildings, or facilities owned or controlled by any component institution or by the System, except as permitted by the provisions of the *Rules and Regulations of the Board of Regents* and approved institutional rules and regulations. The term “solicitation” means the sale or offer for sale of any property or service, whether for immediate sale or future delivery; the distribution of material that is designed to encourage the purchase or rental of any property, product, or service; the oral or written appeal or request to support or join an organization other than a registered student, faculty, or staff organization; the receipt of or request for any gift or contribution; and the request that a vote be cast for or against a candidate, issue, or proposition appearing on the ballot at any election held pursuant to state or federal law. Exceptions to the prohibition include, but are not limited to, collection of membership dues by faculty, staff, or student organizations and approved fund-raising performed by registered organizations.

Student Right-to-Know and Campus Security Act

In compliance with the Student Right-to-Know and Campus Security Act (20 U.S.C., § 1092(a), (e), and (f), as amended), UTSA collects specified information on campus crime statistics, campus security policies, and institutional completion or graduation rates.

Pursuant to the federal law, alleged victims of violent crime are entitled to know the results of campus student disciplinary proceedings concerning the alleged perpetrators. UTSA will make timely reports to the campus community on crimes considered to be a threat to students and employees and reported to campus police or local police agencies.

Every September, UTSA publishes and distributes a report of campus security policies and crime statistics to all students and employees, provides copies of the report to applicants for enrollment or employment upon request, and submits a copy of the report to the Secretary of Education upon request. The annual campus crime statistics report references crimes that occur on property owned or controlled by UTSA and

may be supplemented by listing crimes that occur off campus in buildings or property owned or controlled by student organizations that are registered by UTSA, when such statistics are available from local police departments. The report contains UTSA's policy regarding sex-related offenses, including sexual assault prevention programs, education programs to promote awareness of sex offenders, administrative disciplinary procedures and sanctions for offenders, and counseling and student services for victims.

Student Grievances

Students may need to pursue questions or concerns involving academic or nonacademic aspects of student life. General grievance procedures are set forth below. Students may consult with the Office of Student Life for additional information about the pursuit of a grievance.

A student with a grade grievance should refer to the Grade Grievance Procedure section in the General Academic Regulations chapter of this catalog.

A student grievance may involve a UTSA employee or other students. A student with a grievance involving an employee should first seek to resolve the problem with the employee. If the matter cannot be resolved with the employee, the grievance can be forwarded to the employee's supervisor. A student who believes another student has violated the Student Code of Conduct may institute a proceeding against a student by filing a complaint with the Office of Student Life.

Students should utilize the Problem Solving/Conflict Resolution Office to resolve conflict situations that do not involve criminal conduct or the Student Code of Conduct.

Financial Aid

The Office of Student Financial Aid administers programs to assist students in financing an education at UTSA. Financial aid programs for graduate students include Federal or State Work Study, Texas Public Education–State Student Incentive Grants, Perkins Student Loans, Federal Family Education Loan (FFELP) programs, and various scholarships.

A yearly determination of eligibility and financial need is required for most forms of financial aid.

To be considered for financial aid, a student must

1. be officially admitted to UTSA
2. file a Free Application for Federal Student Aid (FAFSA)
3. meet deadlines set by the Office of Student Financial Aid
4. not be in default of any Title IV, HEA loan made for attendance at any institution
5. not owe a refund on any Title IV, HEA grant received for attendance at any institution
6. make satisfactory academic progress as required to fulfill federal requirements for financial aid eligibility (please see Satisfactory Academic Progress policy below)
7. be classified by the Office of Graduate Studies as a degree-seeking student.

Further,

- Students enrolling midyear (transfer students, graduate students, and students who have been away from UTSA for one or more semesters) must submit a financial aid transcript from the institution they attended the previous Fall Semester, regardless of whether they received financial aid.
- Students who are not U.S. citizens must provide proof of eligibility.
- Students selected for verification by the Department of Education during the processing of FAFSAs will be asked for applicable documentation. This information must be provided if such a student wishes to remain eligible for aid.
- To receive state and federal student aid, male students 18 years of age and older who were born after December 31, 1959, must be registered with the Selective Service.

Satisfactory Academic Progress

The Higher Education Act of 1965, as amended, mandates that institutions of higher education establish a standard of satisfactory academic progress for students receiving financial aid. This standard applies to a student's entire academic history at UTSA, as well as attendance at other postsecondary schools regardless of whether Title IV aid was received. Financial Aid Satisfactory Academic Progress determines a student's eligibility for financial aid only while he or she is attending UTSA.

1. Definitions. The following definitions are applicable to the Satisfactory Academic Progress policy at UTSA:

- Academic year: Two long semesters plus the Summer Semester.
- Full-time enrollment: Enrollment in at least 9 semester credit hours in both long semesters and 5 or more for the entire Summer Semester.
- Half-time enrollment: Enrollment in 5 semester credit hours in both long semesters and 3 semester credit hours for the entire Summer Semester.
- Incremental progress: Completion of required hours in a given year. The Office of Student Financial Aid determines the hours a student must complete by the end of each academic year based on the enrollment status on the University's official census date. To determine these hours, a student should calculate the total number of hours he or she takes in an academic year. For example, if a student enrolls for 10 semester credit hours in the first long semester (row 2) and 9 or more hours in the second long semester (column 2), 18 hours must be completed (the intersection of row 2 and column 3).

Second Long Semester Enrollment			
		6–8 hours	9 or more hours
First Long Semester Enrollment	6–8 hours	12 hours	15 hours
	9–11 hours	15 hours	18 hours

Note: The Satisfactory Academic Progress policy does apply on a semester basis according to enrollment status.

2. Satisfactory academic progress. In order to be considered making satisfactory academic progress, a full-time student must

- Maintain 3.0 or higher UTSA cumulative grade-point average.
- Complete the minimum number of hours required, as outlined in the table above.
- Complete master's degree within three years of full-time study.

Financial aid probation. Graduate students who do not meet the definition of Satisfactory Academic Progress can be placed on financial aid probation for any of the following reasons:

- UTSA cumulative grade-point average drops below 3.0.
- 1–6 semester credit hours deficient of incremental progress requirements.
- Accumulated attempted hours equal to or greater than 1.25 times the number of hours required by student's degree program.

Financial aid termination. Graduate students who are seriously below the Satisfactory Academic Progress standard for any of the reasons shown below will be terminated:

- Two consecutive semesters with a UTSA cumulative grade-point average below 3.0 regardless of time elapsed between semesters at UTSA.
- A net deficiency of 7 or more semester credit hours.
- Attempted accumulated hours in excess of 1.5 times the number of hours required by student's degree.

Note: Students will receive one probation before termination.

3. Special considerations.

- Students who began their academic career at another school and then transferred to UTSA will have their standing classified by the appropriate academic department. The financial aid eligibility of transfer students is identical to that of UTSA students with comparable hours.
- Students who are working toward a second degree, either undergraduate or graduate, will be allowed the number of hours their advisor certifies on their official degree plan. This degree plan must be submitted with the Financial Aid Appeal form.
- Doctoral students will be handled on an individual basis in the Office of Student Financial Aid.
- The cumulative grade-point average is based solely on grades for courses completed at UTSA and does not apply to transfer grades. Successful completion of a course is defined as a course completed with an "A" through "D." Repeated courses can increase the grade-point average; however, these hours will also count toward the maximum number of accumulated hours allowed to complete a degree (see item 2 above).
- The following will not be considered satisfactory completion of a class: "EP," "NC," "W," "IN," "NR," and "RP."

Appeal process. A student who has been terminated may appeal by completing the Financial Aid Appeal form available at the Office of Student Financial Aid.

There is no need to appeal a probation status since this does not immediately affect a student's financial aid. Appeals received for probation status will not be reviewed. The appeal form must be accompanied by a written statement describing any extenuating circumstances that were the causes for not maintaining satisfactory academic progress, the student's degree plan, and appropriate supporting documentation.

The appeal form and accompanying documentation will be referred to the Committee on Fellowships, Scholarships, and Loan Funds. This committee's decision is final.

Once the application process is complete, financial aid will be granted on a first-come, first-served basis subject to funds availability. Students are strongly encouraged to have their applications completed by March 31 of each year.

Further information and application forms are available from the Office of Student Financial Aid. A list of scholarships available to UTSA students is also available and is published each semester in the Schedule of Classes. Contact the Scholarship Office for more information.

Scholarship Office

The Scholarship Office represents UTSA's commitment to assist students with the cost of their education. The office provides students with information on scholarships, graduate fellowships, and assistantships.

Applications are available at the Scholarship Office for the many scholarships it administers. Most UTSA scholarships have a March 31 deadline. In addition to providing scholarship applications, the office maintains a national database and a reference library to help students research scholarship and fellowship opportunities. Scholarships and fellowships are available to graduate students who qualify. Information about scholarships and fellowships can be obtained in college or division offices as well as in the Scholarship Office. Eligibility criteria may include but are not limited to academic performance, good standing in major, satisfactory progress in program of study, half- or full-time enrollment, extracurricular activities, and recommendations.

Veterans Assistance

Educational benefits are available to veterans, eligible dependents of veterans, and personnel on active service in the Armed Forces. The Office of Veterans Certification provides the necessary forms and information about the benefits provided under the law.

Students receiving veterans assistance must keep themselves informed of and meet the academic standards of progress required of all Veterans Administration recipients. These standards are set by Veterans Administration regulations and are monitored by the Texas Workforce Commission.

Identification Cards

Student identification cards are mandatory. Upon receiving the UTSACard, a student may participate in a declining balance program that allows use of the card for purchases at UTSA retail outlets. Students must apply in person at the UTSACard Office, located on the first floor of the John Peace Library Building.

The card is valid as long as the student remains enrolled at UTSA. A \$10 charge is assessed to replace a lost or stolen card. For information on identification cards, contact the UTSACard Office.

Availability of Directory Information

The Family Educational Rights and Privacy Act (FERPA), 20 U.S.C. §1232g, and the Texas Public Information Act, Texas Government Code §552.001 et seq., are respectively federal and state laws providing for the review and disclosure of student educational records. In accordance with these laws, the University has adopted the following policy. Individuals are informed of their rights under these laws through this policy, which is included in the *Handbook of Operating Procedures*, the *Student Guide to UTSA*, and the graduate and undergraduate catalogs. The *Student Guide to UTSA* is available in the Office of the Associate Vice President for Student Life, catalogs are available in the Office of Graduate Studies, and the *Handbook of Operating Procedures* is available in the UTSA Library and most administrative offices.

The University will not permit access to or the release of personally identifiable information contained in student education records to any party without the written consent of the student, except as authorized by FERPA. FERPA's authorizations for release without consent include the following:

1. to appropriate University officials who require access to educational records in order to perform their legitimate educational duties
2. to officials of other schools in which the student seeks or intends to enroll, upon request of these officials and upon the condition that the student is notified and receives a copy of the record if desired
3. to federal, state, or local officials or agencies authorized by law
4. in connection with a student's application for or receipt of financial aid
5. to accrediting organizations or organizations conducting educational studies, provided that these organizations do not release personally identifiable data and destroy such data when it is no longer needed for the purpose it was obtained
6. to the parents of a dependent student as defined in section 152 of the Internal Revenue Code of 1954, provided a reasonable effort is made to notify the student in advance
7. in compliance with a judicial order or subpoena, provided a reasonable effort is made to notify the student in advance unless such subpoena specifically directs the institution not to disclose the existence of a subpoena
8. in an emergency situation if the information is necessary to protect the health or safety of the students or other persons
9. to an alleged victim of any crime of violence, the results of the alleged perpetrator's disciplinary proceeding may be released.

The University releases information in student education records to appropriate University officials as indicated in item 1 above when such records are needed by administrators, faculty, or staff to further the educational or business purposes of the student or the University.

A record of requests for disclosure and such disclosure of personally identifiable information from student education records is maintained by the Office of Admissions and Registrar for each student and is made available for inspection pursuant to this policy. If the University discovers that a third party who received student records from UTSA has released or failed to destroy such records in violation of this policy, access to educational records is prohibited for five years. Respective records no longer subject to audit or presently under request for access are purged according to regular schedules.

Directory Information

At its discretion, the University may release directory information, including the following:

- Name, address, telephone number
- Date and place of birth
- Major field of study
- Participation in officially recognized activities and sports
- Dates of attendance
- Most recent previous educational institution attended
- Classification
- Degrees and awards received
- Date of graduation
- Physical factors (height and weight) of athletes
- Class schedules

Students may have any or all directory information withheld by notifying the Office of Admissions and Registrar in writing each semester during the first 12 days of class of a Fall or Spring Semester, or the first four class days of a summer term. Request for nondisclosure is honored only for the current enrollment period; therefore, a request to withhold directory information must be filed each semester or term in the Office of Admissions and Registrar.

Access to File

Upon written request, the University will provide a student with access to his or her educational records. The Vice President for Business Affairs coordinates the inspection and review procedures for student education records, including admissions, academic, and financial files. Students wishing to review their education records must make written requests to the Vice President for Business Affairs listing the item(s) of interest. Education records covered by the act are made available within 45 days of the request.

A list of education records and those officials responsible for the records is maintained at the Office of Admissions and Registrar. The list includes the following:

Academic Records

- Office of Admissions and Registrar
- College, division, and faculty offices

Student services records

- Director, Counseling Services
- Director, Office of Student Leadership and Activities
- Associate Vice President for Student Life, Office of Student Life

Financial records

- Vice President for Business Affairs, Office of Business Affairs
- Director, Office of Student Financial Aid

Educational records do not include the following:

1. financial records of the student's parents or guardian
2. confidential letters of recommendation placed in the educational records of a student before January 1, 1975
3. records of instruction, administrative, and educational personnel kept in the sole possession of the maker and not accessible or revealed to any other individual except a temporary substitute for the maker
4. records of law enforcement units
6. medical and psychological records
7. thesis or research papers
8. records that only contain information about an individual after he or she is no longer a student at the institution.

Challenge to Record

Students may challenge the accuracy of their educational records. Students who believe their education records contain inaccurate or misleading information, or information that is otherwise in violation of their privacy or other rights, may discuss their problems informally with the Office of Admissions and Registrar. If agreement is reached with respect to the student's request, the appropriate records will be amended. If not, the student is notified within a reasonable period of time that the records will not be amended and is informed by the Associate Vice President for Student Life of his or her right to a formal hearing.

Student requests for a formal hearing must be made in writing to the Associate Vice President for Student Life, who, within a reasonable period of time after receiving such requests, will inform students of the date, place, and time of the hearing. Students may present evidence relevant to the issues raised and may be assisted or represented at the hearings by one or more people of their choice, including attorneys, at the students' expense. The hearing officer who adjudicates such challenges is appointed by the Vice President for Student Affairs in nonacademic matters and by the Provost and Vice President for Academic Affairs in academic matters.

Decisions of the hearing officer are final, are based solely on the evidence presented at the hearing, consist of the written statements summarizing the evidence and the reasons for the decisions, and are delivered to all parties concerned.

The education records are corrected or amended in accordance with the decision of the hearing officer if the decision is in favor of the student. If the student finds the decision unsatisfactory, he or she may include with the education records statements commenting on the information in the records, statements setting forth any reasons for disagreement with the decision of the hearing officer, or both.

The statements are placed in the education records, maintained as part of the student's records, and released whenever the records in question are disclosed.

Students who believe that the adjudications of their challenges are unfair or are not in keeping with the provisions of the act may request in writing assistance from the President.

Copies

Students may have copies of their educational records and this policy. Copies will be made at the student's expense at rates authorized in the Texas Public Information Act, with the exception of official transcripts, which cost \$5. Official copies of academic records or transcripts are not released for students who have a delinquent financial obligation or financial hold at the University.

Complaints

Complaints regarding alleged failures to comply with the provisions of the FERPA may be submitted in writing to the Family Policy Compliance Office, U.S. Department of Education, 400 Maryland Avenue S.W., Washington, DC 20202-4605.

Students with Disabilities

UTSA does not discriminate on the basis of disability. Special assistance is provided to students with disabilities through the Office of Disability Services.

Lost and Found

Abandoned articles found on campus are stored in the University Police Office. Lost items may be claimed by showing proper identification of ownership. UTSA will dispose of items that are not claimed in 60 days.

CAMPUS RESOURCES

The UTSA Libraries

The UTSA libraries provide a range of services to students, faculty, and staff in support of the University's instructional, research, and public service activities. These services reflect the diverse nature of the University's academic programs and a strong emphasis on electronic access and document delivery.

The collections include approximately 500,000 volumes, 200 electronic databases, 2.4 million microforms, and 2,300 periodical subscriptions. The libraries also maintain more than 90,000 government publications. The Special Collections and Archives

Department contains many rare materials relating to the history of Texas, San Antonio, Spanish colonial Mexico, and the southwestern United States.

The libraries' online public access catalog, as well as a full array of electronic indexes, abstracts, journals, full text, and full image resources, are available on the Internet at www.lib.utsa.edu. The libraries participate in local, state, and national programs for resource sharing, including interlibrary lending and document delivery, and maintain cooperative agreements with TexShare, the UT System Electronic Reference Center, the Council of Research and Academic Libraries, and other institutions.

The UTSA Library is housed in the John Peace Library Building. In addition to traditional study and stack areas, circulation, an information desk, interlibrary lending, and reserve services, the library maintains a multimedia center, a bibliographic instruction center, and an electronic classroom. The UTSA Downtown Library is primarily an electronic library designed to serve the Downtown Campus. With few exceptions, print materials are transported for student use between the two campuses. Other services, including instruction and reference and research assistance, course reserve materials, and interlibrary services are available.

Tomás Rivera Center for Student Success

The Tomás Rivera Center for Student Success (TRCSS) combines academic advising functions with an array of student support services. The TRCSS provides academic advising for new students (first-time freshmen) entering UTSA with 30 or fewer semester credit hours of college coursework. The center also coordinates several successful retention programs, including the Checkpoint midsemester progress analysis, the Phoenix probation recovery workshop, and the Academic Development Program, an intensive summer workshop and two-semester follow-up for selected students admitted provisionally.

In addition, the center provides individual and group weekly tutoring sessions in most freshman and sophomore subject areas. Self-paced software is available on a walk-in basis for students who want to review concepts and practice skills associated with courses. Study skills classes are available, as are instructional video and audio tapes in subjects that parallel and augment tutoring and study-skills lessons. Finally, non-course-based remediation instruction is available for students with deficiencies on the TASP.

Learning Assistance, in the center, offers academic tutorial instruction in specific subject areas and general instruction on successful study habits and techniques. Learning Assistance also coordinates Supplemental Instruction classes, which provide small group discussion and study skills to students in historically difficult classes. Individual and group tutoring sessions are provided in support of freshman and sophomore classes not covered by Supplemental Instruction.

Center for Academic Technology

The Center for Academic Technology supports faculty's use of technology to conduct research and help students be active participants in the learning process. At the New Media Lab and the Faculty Resource Centers, the center provides individual assistance to faculty developing Web pages and other multimedia materials.

The lab and centers also provide access to special software and peripherals such as three-dimensional graphics, multimedia authoring and Web page-building software, slide and hardcopy scanners, audio and video capture boards, digital cameras, color printers, and CD burners.

At the Audio and Video Lab, faculty create and edit audio and video productions and use the facilities for student-faculty research and class assignments. The center also lends classroom and presentation equipment, including sound systems, VCRs, and high-performance computer and video projects.

Office of Extended Education

The Office of Extended Education serves the region's adult, professional, and continuing education needs through a range of targeted programs that match the University's unique resources with the lifelong learning needs of the region. Operating out of the Downtown Campus, the office works collaboratively with the academic and nonacademic units of the University to develop and present seminars, short courses, conferences, and programs for the general public, professionals, governmental agencies, and businesses. Instructional staff includes faculty and other professionals. Seminars, short courses, and programs are scheduled at convenient times and locations throughout the city. The UTSA Extended Education bulletin, published semiannually, provides information on seminars, short courses, and programs that are open to the public. The office also provides specialized training to businesses, government agencies, and nonprofit organizations needing customized programs for their employees.

Office of International Programs

The Office of International Programs supports international components in graduate academic programs, promotes international research, develops and manages cooperative agreements and programs for academic exchanges, encourages enrollment of qualified students from other nations, provides special services to international students to maximize their academic success and intercultural exchange, maintains active relationships with past participants in study abroad and exchange programs, and provides assistance in obtaining financial aid for students and faculty wishing to study, teach, or perform research abroad.

UTSA maintains cooperative programs with the National Autonomous University of Mexico (UNAM–Mexico City), Queensland University of Technology (Brisbane, Australia), Keele University (Staffordshire, England), Kyoto University of Foreign Studies (Japan), and the University of British Columbia (Vancouver, Canada). UTSA also has affiliations with Moscow State University (Russia) and Lorenzo de Medici (Florence, Italy). Through consortium agreements, students can also study in China, Costa Rica, France, Malaysia, Spain, Taiwan, and other countries.

The office also assists graduate students interested in grants and other travel opportunities abroad, including Fulbright grants and Security Education Program grants.

Office of Multicultural Programs

The Office of Multicultural Programs provides college transition support services to help minority students, international students, and other underrepresented groups have successful and rewarding college experiences. The various departments in the Office of Student Affairs provide transition support services to all students who request them.

In addition, the office presents programs that educate the UTSA and San Antonio communities about the varied cultural backgrounds of University students, offering culturally diverse students a sense of self-pride and belonging. It seeks to heighten sensitivity to multiculturalism and respect for individual differences. The office is the principal source of assistance to international students with the Immigration and Naturalization Service.

Office of Research Development

The Office of Research Development assists faculty and staff seeking external support for their professional and scholarly activities. Grants and contracts provide support for research, creative projects, training, equipment acquisition, community enrichment, professional development, travel to professional meetings and collections, and institutional development. Services include funding agency information; access to funding references; computerized searches; daily review of funding notices; grant alerts; contacts at agencies, foundations, and corporations; guidelines and application forms; conferences on funding opportunities; and grantsmanship workshops. The office also assists faculty in interpreting funding regulations, project development, proposal preparation, and multidisciplinary proposals, and provides help with editing and budget preparation. Strategic and technical advice is offered on how to develop a winning proposal.

Disability Services

The Office of Disability Services coordinates support services and equipment for students with disabilities. Its goal is to provide services, accommodations, and equipment to enable students with disabilities to participate in and benefit from all university programs and activities. Services and equipment available include registration assistance, note-taking, test accommodation, recorded text, TDD, motorized scooters, adaptive computers, CCTVs, and a Braille printer.

A disability verification letter and an interview with the director begin the process for accessing services. Students are encouraged to contact Disability Services before starting classes to discuss needs and to make arrangements for services.

UTSA Art Gallery

The UTSA Art Gallery enhances the teaching, research, and outreach missions of the Division of Visual Arts and the College of Fine Arts and Humanities. Exhibitions and presentations in the gallery provide a forum for the consideration and interpretation of art works and for the cultural enrichment of the University and San Antonio communities.

The gallery is concerned with the education of students pursuing a career in art. Programs reflect the academic curriculum, provide avenues for research, and present opportunities for the interpretation, design, preparation, and installation of exhibits.

In addition to sponsoring a variety of curated art exhibitions of regional and national interest, the gallery presents a biennial exhibition of works by art faculty and occasionally serves as a setting for special presentations, including poetry readings, award ceremonies, and lectures.

University Bookstore

The University Bookstore, operated by Barnes and Noble Bookstores, Inc., is on the first floor of the University Center. The bookstore maintains a complete inventory of required and recommended books for courses, as well as general school supplies, writing instruments, art materials, soft goods, decals, greeting cards, and a variety of gift items.

The UTSA Downtown Campus Bookstore is on the first floor of the Buena Vista Street Building.

Campus Dining

Dining facilities are available in the University Center, John Peace Library Building, Humanities and Social Sciences Building, Business Building, and Frio Street Building. Menu selections include a deli bar, a self-serve salad bar, entrees and vegetables, burgers, grilled sandwiches, desserts, and beverages. Branded concepts include Burger King, Subway, and Chick-Fil-A.

Students may participate in the UTSA Card program, which allows them to make purchases at dining locations against a declining balance. Students may open accounts at the UTSA Card Office on the first floor of the John Peace Library Building.

Campus Dining, open from 8 a.m. to 5 p.m., is on the first floor of the University Center.

Information Technology

University Network

A campuswide fiber-optic backbone network connects facilities and provides links to wide-area networks with electronic mail, file transfer, and remote log-in capabilities. Switched 10Mb/s and 100Mb/s Ethernet is used throughout most campus classrooms, laboratories, and offices. A T1 connection links the backbone to the Internet, allowing students, faculty, and staff to access electronic data quickly from any computer on the network.

Academic Computing

General-purpose computing labs at both campuses provide access for students. Equipment includes Pentium-based workstations (Windows 95 and NT), Apple Power Macintosh systems, Sun Sparc workstations, and a variety of laser printing, scanning,

and media tools. Full Internet access is standard in all labs. Other specialized computing facilities are maintained by each college.

Electronic mail service is available to students, faculty, and staff on UNIX and Microsoft Exchange servers. Off-campus access is through 56K modem banks.

Larger scale applications in statistics, databases, and other numeric and symbolic computations are supported on a UNIX-based Sun Enterprise 3000 system with 90 gigabytes of disk storage and 1 gigabyte of memory.

Administrative Computing

Administrative computing systems run on an IBM 2003-116/S390 computer system and support the official records of the University for teaching, research, and business transactions. The mainframe-based student records system operates through a Web-based transactional interface called ASAP, the Automated Student Access Program. Information in the administrative systems is accessible with a personal identification number and password. Through an extensive network of electronic connections and facilities, students can conduct functions such as registration and payment of fees on or off campus. The UTSA libraries' system runs on a client-server platform with services for holdings, circulation, and acquisitions. This system is also accessible from the Web.

Distance Education

The cornerstone of distance learning is a video technology network that connects the distance learner with the instructor, ensuring that distance learners receive the same quality education offered to students on site. More than 30 courses are broadcast to the UTSA Downtown Campus and other University of Texas System components. Courses and seminars are also broadcast to businesses, community colleges, high schools, and other universities outside the University of Texas System.

Telephone System

The University-owned telephone systems are networked to provide four-digit dialing among campuses and shared features such as voice mail.

Computer Store

A UTSA-owned virtual computer store, operating primarily through a Web site, offers computer systems and software at educational discounts to students, faculty, and staff.

STUDENT LIFE

The University Center

The University Center, on the West Paseo between the Humanities and Social Sciences Building and the Physical Education Building, provides essential programs, services, and amenities for students, faculty, and staff. The building includes the following administrative offices: Student Leadership and Activities, Multicultural Programs,

Associate Vice President for Student Life, Associate Vice President for Enrollment Services, New Student Programs, Student Judicial Affairs, Assistant to the Vice President for Student Affairs for Planning and Special Programs, Special Assistant to the Vice President for Student Affairs, Counseling Services, Tomás Rivera Center for Student Success, Alumni Programs, Career Services, Campus Dining Catering, and University Center Administration.

Services include the University Bookstore, food-service outlets, a game room, lounge space, television rooms, a video arcade, an information desk, an ATM, and a TicketMaster outlet.

Space dedicated to student activities includes the Registered Student Organizations office space, a desktop publishing room, a workroom, the Student Publications office and production space, the Campus Activities Board office, the Student Government office, the Volunteer Services office, and a central mailbox area for Registered Student Organizations.

Student Leadership and Activities

Student activities enhance the classroom educational experience, assist students in developing leadership qualities and interpersonal skills, and create a stimulating campus environment. UTSA recognizes approximately 140 student organizations involving more than 5,000 students. These Registered Student Organizations represent a variety of interest areas, including academic, service, cultural and minority, honorary, military, political, professional, religious, social, sports and recreation, and special interest.

The Student Leadership and Activities Office provides administrative and advisory support for the Registered Student Organizations, Student Government, the Campus Activities Board, the Volunteer Organization Involving Community Education and Services (V.O.I.C.E.S.), the Greek community, and leadership development programs.

UTSA Alumni Association

The UTSA Alumni Association seeks to strengthen its ties among the University; its past, present, and future students; and the community in the interests of academic excellence. It provides scholarships to new and current students. Alumni-sponsored activities include an annual meeting each fall, the Balloon Fest, the Dollars for Scholars 5K Run, and Homecoming events.

The Alumni Association was established in 1977 and incorporated in 1978. It is a dues-paying membership organization governed by a 21-member elected board of governors. An executive director of alumni programs manages the daily operations.

Intercollegiate Athletics

UTSA fields men's and women's teams for intercollegiate competition in Division I of the NCAA. Men's sports are basketball, baseball, cross country, golf, indoor and outdoor track, and tennis. Women's sports are basketball, cross country, indoor and outdoor track, softball, volleyball, and tennis.

Enrolled students receive admission to any on-campus UTSA athletic event.

Intramural and Recreational Activities

UTSA offers a range of intramural programs and recreational activities. Facilities in the Convocation Center and the Physical Education Building include gymnasiums for basketball, badminton, and volleyball, two weight rooms, ample indoor jogging space, an outdoor 400-meter synthetic-surfaced track with a grass playing infield, a tennis center, and intramural fields for soccer, flag football, and softball. A softball and baseball complex is adjacent to the outdoor track.

Intramural sports include tennis, track, volleyball, badminton, shuffleboard, table tennis, softball, soccer, flag football, basketball, and billiards.

Living Accommodations

On-Campus. UTSA, in partnership with the private sector, has developed a contemporary approach to campus housing. Residence hall and apartment housing is available on campus.

Campus Housing–Residence Hall. Chisholm Hall is open to all students and offers traditional accommodations with two-person rooms with private baths. Utilities are included. Residents may make 24-hour-a-day use of the adjacent Activity Center, with TV, game room, and study lounge. A junior olympic-size indoor swimming pool is open 15 hours a day. For additional information, contact Chisholm Hall at (210) 458-6700.

Campus Housing–Apartments. University Oaks Apartments offers efficiencies and one-, two-, and four-bedroom units. Other amenities include a swimming pool, jacuzzi, basketball and volleyball courts, and limited-access gates. Housing is available year-round and offers various 9- and 12-month leases. For additional information, contact the University Oaks Housing Office at (210) 354-7676.

Off-Campus. Student Housing Services, in the Student Life Office, distributes an off-campus housing directory to help students find accommodations in the San Antonio area. Contact the Student Life Office at (210) 458-4720 for on- or off-campus housing information.

HEALTH AND COUNSELING

Student Health Services

Services and Costs. The focus of Student Health Services is to provide first aid for injuries and limited medical and nursing care for minor illnesses. In cases of severe illness or a serious accident, the student will be transferred to a local hospital for treatment and will be responsible for the expenses incurred, including transportation. The student medical service fee allows free medical coverage for general use of the student clinic and on-campus physician visits. There are reasonable charges for student clinic laboratory tests and medications.

Student Health Services emphasizes interdisciplinary health education, health promotion, prevention, wellness, and outreach programs to the student population, and uses nonphysician and physician providers for primary health care.

Immunizations and Insurance. Incoming students must return the Health Information form included in UTSA's application for admission to Student Health Services. Current immunization for TD (tetanus-diphtheria) and MMR (measles, mumps, rubella) is highly recommended. Student Health Services can provide instructions on the quickest and most economical method to complete immunizations. International students must have a tuberculosis (TB) test within 90 days of admission. Students are advised to carry health and accident insurance. A UTSA group plan is available. International students are required to maintain approved comprehensive health insurance while enrolled at UTSA. For information on cost and coverage, contact Student Health Services.

HIV/HBV. UTSA recognizes that Human Immunodeficiency Virus (HIV) and Hepatitis B virus (HBV) are serious public health threats. UTSA's policy on HIV and HBV infection, as well as educational pamphlets about methods of transmission and prevention of HIV and HBV infections, are available at Student Health Services (see *Student Guide to UTSA*, p. 29).

Counseling

Counseling Services provides professional services to help meet the personal and developmental needs of enrolled students. Staff psychologists use counseling techniques, psychological assessment, and other aids. Services are confidential and voluntary, and most services are free to enrolled students.

Services include individual sessions for personal and educational concerns, services to couples with relationship difficulties, and regularly scheduled group sessions on topics such as vocational choice, assertion training, interpersonal communication skills, stress management, understanding sexual orientation, and living with HIV. Counseling Services also helps students assess career choices or identify possible learning disabilities.

Testing

Testing Services provides information and a University-wide testing service for current and prospective students.

Graduate admissions tests offered include the Graduate Management Admissions Test (GMAT) for entrance into M.B.A. programs, the Graduate Record Examination (GRE) for all other graduate programs, the Law School Admissions Test (LSAT), and the Medical College Admissions Test (MCAT).

Career Services

Career Services provides students and alumni with employment and career development services, including job search assistance and career planning and guidance. Career Services helps students locate part-time jobs and full-time career positions, internships, and cooperative education. A satellite office in the Business Building is available for M.B.A. students.

At the online Career Services Job Bank (www.jobbank.utsa.edu), students can register, create an online resumé, view job listings, and sign up for interviews with companies recruiting on campus. The office also maintains a library with resources on employment and careers, company videos, employer literature, and recruitment manuals.

Each Fall and Spring Semester, company recruiters visit the office to conduct interviews with students, graduating seniors, and alumni seeking co-op, internship, and entry-level positions. Career Services also sponsors career fairs that bring more than 100 employers to the campus.

Teacher Placement Service

The Teacher Placement Service is located in the Office of Teacher Advising, Certification, and Placement. It assists undergraduates, graduates, or alumni who seek employment in the field of education by coordinating communication between students and employers and acting as a clearinghouse for student placement files. The office also sponsors a semiannual educator job fair.

Information about services and fees for placement files is available in the Office of Teacher Advising, Certification, and Placement.

RESEARCH ORGANIZATIONS

Institute for Music Research (IMR)

The Institute for Music Research was established to sponsor research primarily in the areas of music psychology and music technology. Activities include providing a variety of computer services, hosting national and international conferences, conducting research, publishing conference proceedings and other research projects, and making presentations at state, national, and international meetings. Online computer services are available through the Internet and World Wide Web and include a bibliographic database of music-related computer software. Conferences include annual music technology conferences, an international music medicine conference, and a conference on music and the brain. Research projects include a variety of projects in music psychology and music technology, such as a PET scan of musicians and development of multimedia programs for music instruction. Publications and presentations also represent a variety of research activities in these fields.

Institute for Studies in Business (ISB)

The Institute for Studies in Business is the research component of the College of Business. Its major objectives are to offer faculty and students a superior research environment, to encourage interaction between the business community and the University, and to provide applied economics and business training to students. The institute also interacts with faculty in other colleges to provide an interdisciplinary approach to research and business education.

The institute focuses on the application of theories and research techniques to problems encountered in public and private decision making. Specialized data files are

maintained, and a research library and computer systems guide interested users to sources of information. The knowledge and experience of the University's faculty and professional staff are utilized to undertake specific research projects in marketing, economic analysis and modeling, human resource planning, information systems, financial analysis, and economic development research.

Metropolitan Research and Policy Institute

The Metropolitan Research and Policy Institute, located at the UTSA Downtown Campus, conducts applied science research on policy issues, provides training and issue-based education for individuals and agencies involved in policy-making, and provides direct services to nonprofit agencies and community groups in San Antonio and South Texas. Training programs include executive training seminars, conferences and colloquia, and pro bono seminars for community groups and neighborhood associations.

Tourism Research Center (TRC)

The Tourism Research Center conducts applied research on the tourism industry in San Antonio and South Texas, allowing College of Business faculty and students to interact with the community and providing the tourism community with the college's expertise. Research focuses on business economics, economic development, management and human resources, and marketing. Clients include local and state governmental entities, tourism industry firms, and nonprofit organizations.

Center for Professional Excellence (CPE)

The Center for Professional Excellence coordinates efforts within the College of Business to support the personal and professional growth of those who will share the responsibility of keeping institutions vital. Its mission is to bring faculty, students, and practitioners together to create a lifelong learning resource that serves their mutual needs.

The center offers extracurricular courses, workshops, conferences, seminars, consulting, and research programs to support professional excellence in business and other community institutions. The center also conducts focus groups and annual meetings to define needs and explore ways in which University and community resources can be effectively coupled to address them.

Center for Telecommunications and Advanced Computing

The Center for Telecommunications and Advanced Computing focuses on the design and application of advanced parallel and distributed system techniques for solving real-world problems in areas ranging from telecommunications to neurobiological systems. The center provides an advanced computational environment with resources that promote interdisciplinary research and multidisciplinary problem-solving.

The center seeks industry participation and support through formal affiliate programs, joint federally funded research projects, and community- and industry-based research activities. In addition, the center supports an educational outreach program designed to enhance the retention and occupational opportunities for underrepresented students.

The center encourages industry-supported student internships and co-op employment programs and awards research-sponsored scholarships and academic fellowships.

Center for Water Research

The Center for Water Research is a component of the College of Sciences and Engineering. Faculty, students, and engineers and other scientists on the center's staff conduct research in hydrology, surface water hydrology, geochemistry, geophysics, and environmental science and engineering.

Research and analysis capabilities include stable isotope geochemistry, water chemistry, borehole geophysical logging, surface geophysical surveys, structural geology of aquifer systems, microbiology of bioremediation, leakage and contaminant studies, mathematical modeling of groundwater flow and contaminant transport, surface water modeling, economic analysis of water usage, formulation of decision models for water planning, and study of municipal water supply and treatment systems.

Center for Archaeological Research

The Center for Archaeological Research, a component of the College of Social and Behavioral Sciences, was established in September 1974. Among its objectives are the following: to provide the opportunity for students to train in archaeology; to promote archaeological research in the South and South Central Texas region, the American Southwest, northern Mexico, and Mesoamerica; to carry out archaeological research and services for private, federal, state, and local agencies as required by legislation; to conduct public outreach and education programs for schools and other groups through its Legacy program; and to sponsor conferences.

The center's staff includes about 40 professionals and graduate and undergraduate students who have conducted archaeological investigations in various parts of Texas and other regions. Results of center investigations are published in more than 400 volumes in 10 publications series, including *Archaeological Survey Reports*; *Regional Studies*, *Special Reports*; *Guidebooks in Archaeology*; *Choke Canyon Series*; *Colha Project Interim Reports*; *Colha Project*; *Belize, Working Papers*; *Papers of the Colha Project*; and the *Archaeology and History of the San Juan Bautista Mission Area, Coahuila, and Texas*.

The center has administered more than 400 contracts and grants to date, including excavations at a Late Archaic village in Chihuahua, Mexico; a two-year study of the archaeology and ethnohistory of the Spanish mission complex at Guerrero, Mexico; a multiyear study of the prehistory and history of the Choke Canyon Reservoir area in southern Texas; a study of the early Mogollon farming sites in the Southwest; five seasons of excavation at the Maya site of Colha in Belize, Central America; projects at San Antonio's five Spanish missions; and studies of historic downtown San Antonio. Several projects have also been carried out in Louisiana and New Mexico.

In 1985, the center launched its Friends of Archaeology program of public participation in support of archaeological research. Through this program, the center is able to provide seed grants for faculty and students and research assistant stipends for graduate and undergraduate anthropology majors, as well as the sponsorship of special lectures,

special studies, and publication of important reports. In 1994 the center enhanced its educational outreach activities by launching its Legacy program.

The center's Web site is www.csbs.utsa.edu/research/car.

Center for Learning and Development Research in Education

The Center for Learning and Development Research in Education, a component of the College of Social and Behavioral Sciences, is designed to stimulate basic and applied research on learning and development, particularly as it relates to the educational process. Faculty and students from this college, as well as from other colleges, are encouraged to use the center to help them study problems appropriate to this area. Objectives include promotion of research in learning and development in education; development of cooperative faculty-student research; cooperation with school districts, social service agencies, and community agencies on problems of mutual interest; and solicitation of funds for appropriate activities.

The center helps identify and coordinate faculty, student, and community interests, needs, and resources. Many of the projects involve cooperative efforts among UTSA, local school districts, and the community.

Center for the Study of Women and Gender

The Center for the Study of Women and Gender is located in the College of Social and Behavioral Sciences. The only institution of its kind in Texas, the center promotes multidisciplinary, multicultural, and global research on topics related to women and gender. The center promotes, facilitates, and disseminates research by UTSA faculty and independent scholars on women and gender; promotes collaboration among academic institutions, corporate America, and the public sector on issues such as women's health, sexual harassment, affirmative action, and promotion and pay inequities; helps elementary and secondary schools, as well as institutions of higher education, integrate scholarship on women and gender into their curricula; collects primary historical sources relating to women and gender in San Antonio and throughout South Texas; and sponsors public programming—such as events for Women's History Week—that explores a variety of women and gender policy issues.

Center for Educational Development and Excellence (CEDE)

The Center for Educational Development and Excellence (CEDE), established in 1992 as a collaborative endeavor of San Antonio educational and community institutions, is dedicated to the lifelong development of teachers as learners in a culturally diverse, technologically enriched environment. The CEDE is dedicated to serving the teachers of the greater San Antonio area and South Central Texas with innovative teacher education programs that are field based and technology oriented to meet the educational needs of the area's multicultural population.

UTSA is in partnership with four other universities (University of the Incarnate Word, Our Lady of the Lake University, St. Mary's University, and Trinity University); six school districts (Edgewood ISD, Harlandale ISD, North East ISD, Northside ISD, San Antonio ISD, and South San Antonio ISD); Education Service Center, Region

20; Alliance for Education; and the local business community (USAA). CEDE partners are working in 22 Professional Development Schools.

Hispanic Research Center

The Hispanic Research Center operates under the auspices of the Provost and Vice President for Academic Affairs. Its mission is to provide an interdisciplinary University focus on research regarding Mexican American and Latino populations in South Texas, the United States–Mexico border region, and the United States. The center stimulates research on Hispanic populations in the United States and Texas and conducts faculty forums emphasizing research on Hispanics. Some research areas include social and political access, education, substance abuse, linguistics, culture, business and economic opportunity, mental and physical health, and United States–Mexican relations.

Institute of Texan Cultures

The institute was established as the official State of Texas exhibit at San Antonio's HemisFair '68 and was transferred to The University of Texas System Board of Regents by the 61st Legislature in 1969. On February 14, 1986, the regents approved an enhanced educational mission for the University of Texas Institute of Texan Cultures, along with an administrative affiliation of the institute with UTSA.

Since its inception, the institute has served as an educational center for the interpretation of Texas history and folk culture. Displays of art and artifacts become a teaching laboratory as professionally trained staff members and volunteers use the exhibits as a setting for living history. Outreach programs touch the lives of Texans, especially students, through traveling exhibits, TexKit presentations, and "Lifetimes: The Texas Experience," an ITC/UTSA statewide radio program. The annual Texas Folklife Festival, held on the institute's grounds for four days each August, attracts more than 10,000 participants and 70,000 visitors every year.

3.
TUITION, FEES, CHARGES,
AND DEPOSITS



TUITION, FEES, CHARGES, AND DEPOSITS

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TUITION AND FEE CHANGE

Tuition and fee amounts are subject to change by legislative action or by action of the Board of Regents of The University of Texas System. Changes will be effective upon the date of enactment and will be reflected in fees charged.

METHODS OF PAYMENT

Students are entitled to enter class or laboratory only after payment of their tuition and fees has been arranged using one of the alternatives discussed in this section. Once a payment option has been selected by the student at registration, no change in the payment plan will be allowed during the semester.

Full Payment

Under this option, the student makes full payment of all tuition and fees in advance of the beginning of the semester.

Installment Program

Under the installment option, the student pays one-half the tuition and eligible fees in advance of the beginning of the semester and one-fourth before the start of the sixth and 11th class weeks. There is a service charge of \$16 for this payment option.

A late fee of \$10 will be added to the student's bill if an installment payment is not made by the due date. A student who fails to make full payment before the end of the semester may not receive credit for the work done that semester and will not be allowed to register for future semesters until the delinquent amount is paid.

Not all fees are eligible for payment in installments. The fees for parking, installment, orientation, and add/drop and the property deposit are not eligible for the installment payment program and must be paid in full on the initial billing.

Installment payments may only be chosen during the Fall and Spring Semesters. If the student chooses to use the installment option, a promissory note must be completed and filed in the Fiscal Services Office before the registration process can be considered complete.

All financial aid will be applied to total tuition and fees before calculation of the payment plan. Partial installment payments will not be accepted. Prepayment in full of an installment or of total installments, however, will be accepted any time after registration.

Refunds from the add/drop process will be prorated for remaining installments. Additional fees incurred from the add/drop process will be added to the balance due from registration, and the installment payments will be recalculated.

Accepted Forms of Payment

Payment may be made by credit card or personal check for the exact amount due, provided the bank transit number is encoded on the check in compliance with revised Federal Reserve Bank regulations. Students may not obtain cash by writing a check for a larger amount.

A bad check, whether written by mistake or otherwise, unless it is the admitted error of the bank concerned, is likely to delay actual payment and result in a penalty (see Returned Check Fee). If a check used for payment of advance registration is returned and is not cleared before the start of the semester, a late registration fee of \$15 will be charged to the student.

Personal checks up to \$5 may be cashed in the University Bookstore. Many local merchants will not cash out-of-town checks. It is recommended that students establish checking accounts in local banks before enrolling so that they can easily cash checks in the city.

PAYMENT AND REFUND POLICIES

Policies regarding the payment or refunding of tuition, fees, and charges are approved by the Board of Regents of The University of Texas System and comply with applicable state statutes. If a person desires clarification of any matter relating to payment or refund of such charges, he or she should contact the office or administrative unit from which the charge or refund originated.

Residence Regulations

Students' status as residents or nonresidents will be made in accordance with Title 3 of the Texas Education Code. Questions regarding residence regulations or residence status should be directed to the Office of Graduate Studies.

A student entering or reentering UTSA may be required to file a residence questionnaire. Once residence is established, no change can be made in residence classification without the express authorization of the Registrar.

Refund Policy for Withdrawal or Dropped Courses

Withdrawing from UTSA

Withdrawing is the formal discontinuance of a student's enrollment at UTSA and involves the student's dropping *all* classes. Depending on the time of withdrawal, a student may be entitled to a refund of some part of the tuition and certain fees. The forms and exit survey needed for withdrawing from UTSA may be obtained in the Office of Admissions and Registrar.

The following table presents the descending scale of refund amounts for students withdrawing from UTSA. Students who wish to withdraw from a Summer Semester must withdraw from all courses for which they are registered in both terms of the Summer Semester.

UTSA will refund tuition and fees paid by a sponsor, donor, or scholarship to the source rather than directly to the student who has withdrawn if the funds were made available through the institution.

Semester	Time of Withdrawing	Amount of Refund of Tuition and Returnable Fees*
Regular (Fall or Spring) Semester	Prior to the first class day	100% of applicable tuition and returnable fees
	During the first 5 class days	80% of applicable tuition and returnable fees
	During the second 5 class days	70% of applicable tuition and returnable fees
	During the third 5 class days	50% of applicable tuition and returnable fees
	During the fourth 5 class days	25% of applicable tuition and returnable fees
	After the fourth 5 class days	No refund of tuition or fees
Summer Term	Prior to the first class day	100% of applicable tuition and returnable fees
	During the first, second, or third class day	80% of applicable tuition and returnable fees
	During the fourth, fifth, or sixth class day	50% of applicable tuition and returnable fees
	After the sixth class day	No refund of tuition or fees

Dropping Courses

Dropping refers to the removal of one or more individual courses from a student's schedule while the student remains enrolled in at least one course for that semester. Refunds of applicable tuition and fees will be made for courses that a student drops on or before the Census Date, provided the student remains enrolled for that semester or term. No refund will be given for individual classes dropped after the Census Date.

Refunds for courses dropped by a student who withdraws from UTSA later in the semester or term will be calculated according to the percentage schedules in the refund policy above. Refund of tuition for dropped courses will be made only if the original payment exceeds the established minimum amount.

*Supplementary, general, laboratory, University Center, student services, medical services, Recreation Center, publication, international education, and class related

Summer terms are considered as one semester for refund and drop purposes. Students who drop courses in either term should refer to Census Dates for refund purposes.

No refunds are made until 15 days have elapsed from the Census Date. Refund checks are mailed to the address indicated when the student withdraws from the University. Students entitled to refunds should allow 10 working days after the 15-day clearing period for receipt of the refund.

Concurrent Tuition

Students who register concurrently at more than one public institution of higher education in Texas may receive the benefits of a lower tuition rate. If, at the time of registration, a student can produce evidence of having already paid his or her tuition at another public institution of higher education in Texas, the student should present such evidence at the Fee Assessment Station during registration.

Exemption from Tuition and Fees

The statutes of the state of Texas prescribe certain cases in which students can be exempted from tuition and/or certain fees. The various types of exemptions and the fees to which such exemptions apply are described below; however, in each case it is the student's responsibility to initiate the action of applying for an exemption through the Registrar's Office and providing satisfactory evidence that conditions required for the exemption have been met. Until such time as the exemption is granted, a student will be required to pay tuition and fees from his or her own funds.

Students who might be eligible for an exemption should apply for the exemption at the Registrar's Office at least one month before registration for the semester in which they plan to utilize the exemption provision. (Applications for the Good Neighbor Scholarship are accepted in the Office of Student Financial Aid in January and February before the academic year in which students plan to attend UTSA.)

Description	Eligibility	Tuition and Fees Exempted
Accredited school scholarship	Highest-ranking graduate of an accredited Texas high school	Tuition during first two regular (Fall and Spring) semesters following graduation
Texas veterans	1. Resident of Texas for 12 months before registration 2. Bona fide resident of Texas at time of entering the service 3. Served in the armed forces in World War I, World War II, the Korean War, the Cold War, the Persian Gulf War, or the Vietnam, Grenada, Lebanon, or Panama era 4. Honorably discharged 5. Not eligible for federal educational benefits	Tuition Laboratory fees Supplementary fees

Description	Eligibility	Tuition and Fees Exempted
Children of disabled Texas firefighters and peace officers	Child (under 21) of disabled full-paid or volunteer firefighters; full-paid municipal, county, or state peace officers; custodians of the Department of Corrections; or game wardens who died or became disabled in the line of duty	Tuition Required fees*
Students who are blind or deaf	Person who is blind; person whose hearing is nonfunctional	Tuition Required fees* General Property Deposit
Children of Texas veterans	1. Either - child of a member of the armed forces who died during service in World War II, the Korean War, the Cold War, the Persian Gulf War, or the Vietnam, Grenada, Lebanon, or Panama era - orphan of members of the Texas National Guard killed since January 1, 1946, while on active duty 2. Not eligible for federal educational benefits	Tuition Laboratory fees Supplementary fees
Good Neighbor Scholarship	1. Native-born students from other designated nations of the American hemisphere³ 2. The following must be provided: - evidence of native citizenship and proof of five years' residency in that country - scholastic eligibility - valid student visa - other documentation as required (inquire at Office of Student Financial Aid) Applications are available only in January and February for the following Summer, Fall, and Spring Semesters	Tuition
Firefighters enrolled in fire science	Enrolled in course offered as part of the fire science curriculum courses	Tuition Laboratory fees Supplementary fees

*Supplementary, general, laboratory, student services, University Center, medical services, Recreation Center, library resources, publication, international education, and class related

**The state of Texas is limited to 235 Good Neighbor Scholarship recipients per year.

Description	Eligibility	Tuition and Fees Exempted
Students in foster care	Student in foster or residential care under the conservatorship of the Department of Protective Services on or after the day preceding the student's 18th birthday	Tuition Required fees* General Property Deposit
Children of Prisoners of War or Persons Missing in Action	Child (under 21) or dependent who receives majority of support from parent; parent must be classified by Department of Defense as a Prisoner of War or Missing in Action at the time of registration	Tuition Required fees*

Title IV Program Refund

As an institution participating in programs under Title IV of the Higher Education Act of 1965 as amended, UTSA is required to refund unearned tuition, fees, room and board, and other charges to certain students attending the institution for the first time who have received a grant, loan, or work assistance under Title IV of the act or whose parents have received a loan on their behalf under 20 U.S.C. § 1087-2. The refund is required if the student does not register for, withdraws from, or otherwise fails to complete the period of enrollment for which the financial assistance was intended. No refund is required if the student withdraws after a point in time that is 60 percent of the period of enrollment for which the charges were assessed. A student who withdraws before that time is entitled to a refund of tuition, fees, room and board, and other charges that is the larger of the amount provided for in § 54.006, Texas Education Code, or a pro rata refund calculated pursuant to § 484B of the act, reduced by the amount of any unpaid charges and a reasonable administrative fee not to exceed \$25. UTSA will use the pro rata method for determining refunds of tuition and fees, as in the following example:

Fall Semester			
Week	% Refund	Week	% Refund
1	90	5 and 6	60
2 and 3	80	7 and 8	50
4	70	9	40

*Supplementary, laboratory, student services, University Center, medical services, Recreation Center, library resources, publication, international education, and class related

Nonpayment of Debts

Students who fail to pay full tuition and fees, including late fees, on the due date are subject to one or more of the following actions at the University's option:

1. denial of readmission, including further registration
2. withholding of official transcripts
3. withholding a degree to which the student would otherwise be entitled
4. withholding of grades
5. all penalties and actions authorized by law.

When a student has any of the above actions against his or her record, it is the student's responsibility to clear any obligations with UTSA and see that the Registrar's Office is notified. No further services of the University will be provided until all obligations are cleared.

A student who pays tuition and fees with a check that is not subsequently honored by a bank and the fault is not that of the bank, and who does not make payment within 15 days, will be withdrawn from the University by the Registrar's Office for nonpayment of tuition and fees.

PROCEDURAL FEES

Add/Drop Fee

A \$5 fee will be charged for each add or drop transaction processed during the add/drop period (beginning the first class day and ending on the Census Date). The fee will not be charged during the priority registration period or for transactions initiated by UTSA. This fee is nonrefundable.

Application Fee

UTSA charges a nonrefundable application fee of \$25 for students applying for admission or readmission to the University. The fee is also charged upon reapplication for admission following academic dismissal.

Auditing Fee

Auditors of courses must submit a Request for Audit form to the Registrar for approval. Students registered at UTSA may, with the approval of the instructor and Dean of the college in which the course is offered, audit courses by paying a nonrefundable auditing fee of \$25 a course.

Upon approval of a Request for Audit form, a nonstudent auditor must pay a nonrefundable auditing fee of \$50 a course. Nonstudents over the age of 65 are permitted to audit without paying a fee, provided space is available and a Request for Audit form is approved. Nonstudent auditors who wish to have library privileges may receive them by filling out a Friends of the UTSA Library application at the circulation desk in the UTSA Library on the second floor of the John Peace Library Building, and by paying a nonrefundable fee. There are limits on the services offered

to Friends of the UTSA Library cardholders; further details are available at the circulation desk.

Permission to audit may be obtained and fees paid beginning the first day of class through the Census Date.

Auditors of courses must register their vehicles and obtain parking permits from the Office of Fiscal Services.

Degree Application Fee

A \$30 application fee is required of candidates for a degree. Application for a degree must be made at the Office of Graduate Studies, and the fee must be paid according to the dates listed in chapters 6 and 7, Master's and Doctoral Degree Regulations. This fee is nonrefundable and must be paid each time an application for degree is filed. The degree application fee does not cover cap and gown rental or purchase.

Duplicate Diploma Fee

A \$15 fee will be charged for each request for a duplicate diploma.

Late Registration Fee

A late registration fee of \$5 is charged for the first day of late registration, and an additional \$2.50 a day is assessed thereafter. The maximum late registration fee for any one semester or term is \$15. This fee may be waived only in extenuating circumstances by the President or his delegate. The late registration fee is nonrefundable.

SEMESTER FEES

Mandatory Semester Fees

First Semester Only

Students are assessed the following onetime charges in their first semester at UTSA.

General Property Deposit. Every student must make a general property deposit of \$10 at the time of initial registration to protect the University from losses such as property loss, damage, or breakage; violation of rules in any University library or laboratory; failure to return keys furnished by the University; or damage to or loss of any other University property.

The deposit is refunded upon request, less outstanding charges, only when the student officially withdraws from school or graduates. When the property deposit refund is requested, the student has the option to elect that the property deposit be used to pay his or her first year's dues in the UTSA Alumni Association. The form for requesting a refund or that the deposit be used for association dues is available at the Fiscal Services Office.

A general property deposit that remains without call for refund for a period of four years from the date of last attendance at UTSA shall be forfeited, and the deposit shall become operative to the permanent use and purpose of student scholarships.

Every Semester

Certain services and benefits are provided every semester by UTSA to all students. These are supported by tuition and the following fees: student services, University Center, automated services and computer access, library resources, Recreation Center, university publication, international education, and medical services. Students are assessed these fees each semester. Refer to the tuition and mandatory fees tables on pp. 85–86 for semester totals.

Tuition. Pursuant to Subchapter B, Chapter 54, Texas Education Code, each student who registers at UTSA is required to pay tuition* according to the number of semester credit hours for which registration is completed and according to his or her residence classification (see tuition and mandatory fees tables).

Student Services Fee. A compulsory student services fee is charged to all students. This fee provides services and activities that are separate and apart from the regularly scheduled academic functions of the University and directly involve or benefit students. These services and activities include recreational activities, intramural and intercollegiate athletics, artists and lecture series, cultural entertainment series, student government, and any other student activities and services specifically authorized and approved by the Board of Regents. Students are assessed this fee based on the number of semester credit hours they register for (see tuition and mandatory fees tables).

University Center Fee. The University Center fee is \$4 per semester credit hour. The minimum fee is \$20 and the maximum is \$44 per semester.

Automated Services and Computer Access Fee. Each student who registers at UTSA is required to pay a \$12 per semester credit hour fee. The minimum fee is \$48 and the maximum fee is \$144 per semester.

International Education Fee. A \$1 per semester fee will be assessed all students enrolled at UTSA to cover the costs of the international education program.

Library Resources Fee. A fee of \$2 per semester credit hour is charged all students who register at UTSA to defray costs of providing direct services and supplies, including online access to full-text databases, academic indexes, and printed books and journals.

Medical Services Fee. A \$15 per semester fee is assessed all students for medical services provided at Student Health Services.

Recreation Center Fee. The Recreation Center fee is \$1 per semester credit hour, with a maximum of \$30 per semester.

*See Exemption from Tuition and Fees in this chapter.

Student Photo Identification Charge. A charge of \$3 is assessed each regular Fall and Spring Semester and each summer term for the issuance of a student photo identification card.

University Publication Fee. A \$5 per semester fee will be assessed all students to cover the costs of providing catalogs, class schedules, and other official publications.

Possible Additional Semester Fees

Depending on the degree pursued or the courses selected by a student, additional fees may be required. Students should be aware of additional fees incurred by their degree or course selection. Some (not all) of these fees are noted by the course listing in the Schedule of Classes.

Architecture Resource Fee

A \$25 fee is assessed students who are registered in certain architecture courses to provide materials and supplies for various projects and experiments.

Architecture Studio Use Fee

A fee of \$25 per course is assessed students enrolled in courses in the architecture curriculum who will use any of the studios under the direction of the Division of Architecture and Interior Design.

Communication Materials Fee

A \$5 fee is assessed students who are registered in certain communication courses to provide materials and supplies used during the semester.

Educational Field Instruction Fee

A \$40 fee will be assessed students during their semester of student teaching and students in special education practicum settings, counseling practica, and student internships.

EIS Auxiliary Fee

A \$20 per course fee is assessed international students taking courses in English for International Students (EIS).

Field Trip Fee

A supplementary fee is assessed students in certain courses to pay for the expenses of field trips.

Foreign Language Multimedia Learning Center Fee

Each student who registers for a foreign language course is required to pay a \$7 per course fee.

Foreign Student Insurance Fee

International students are required to purchase the UT System Medical Insurance Plan for students, which covers basic medical expenses for injury and sickness. The plan is in compliance with the United States Information Agency's regulations. The fee is assessed as part of the regular tuition and fee charges. A waiver of this fee is available, provided the student shows proof of coverage by a comparable U.S. health plan and UTSA approves the comparable health coverage. This waiver must be submitted before the Census Date.

Graphic Art Centre Fee

A fee of \$1,666 per semester is assessed students who participate in Art 4593 at the Santa Reparata Graphic Art Centre.

Installment Payment Plan Fee

A \$16 charge is assessed when a student elects to pay tuition and fees under the installment payment plan. This charge is normally included in the first installment payment.

Instrument User Fee

In certain music courses, an instrument user fee of \$20 per course may be charged. A notation of this fee appears with the course listing in the Schedule of Classes.

Laboratory Fee

In certain courses a laboratory fee, not to exceed the actual cost of materials and supplies and no less than \$2 or more than \$30, may be charged. When a laboratory fee is charged, the Schedule of Classes indicates the associated fee.

Music Course Fee

A \$10 per course fee for nonmusic majors is assessed students who are registered in a course that uses equipment for instruction purposes. Music majors are charged \$25 per semester to defray the cost of equipment maintenance.

Parking Fees

Vehicles parked on the campus must comply with UTSA Parking and Traffic Regulations. Copies of these regulations are available during registration and in the University Police Traffic Office. Parking fees for students are shown in the table on the next page.

Class	Amount	Type of Permit
G	\$46	General permit (purchased in Fall Semester)
	\$24	General permit (purchased in Spring Semester)
	\$19	General permit (purchased in either summer term)
D	No fee	No fee for permanently disabled persons or disabled veterans
H	\$19	Motorcycle, motor scooter, motorbike permit (purchased in Fall Semester)
	\$16	Motorcycle, motor scooter, motorbike permit (purchased in Spring Semester)
	\$11	Motorcycle, motor scooter, motorbike permit (purchased in either summer term)
W	\$6	Bicycle permit (purchased at any time)

Parking permits are available for persons with disabilities in accordance with applicable statutory law and UTSA Parking and Traffic Regulations.

Refunds for unused portions of parking permits must be requested on the Refund Request form available in the University Police Traffic Office. Refunds are made in accordance with the UTSA Parking and Traffic Regulations, Section 6, para I.

Physical Education Fees

Physical Education Activity Fee. A fee of \$10 for a semester or summer term is required for physical education courses or activities. Lockers, towels, and locks are provided.

Equipment and Lane Fee. A fee of \$60 for a semester or summer term is required for physical education bowling courses.

Driving Range Fee. A fee of \$44 for a semester or summer term is required for physical education golf activity courses.

Swimming Pool Fee. A fee of \$22 for a semester or summer term is required for physical education swimming activity courses.

Studio Art Fee

A fee of \$25 per course is assessed students enrolled in visual arts courses that will use any of the studios under the direction of the Division of Visual Arts.

Supplementary and Special Fees

Some art, music, and other courses may require supplementary or special fees. When such fees are charged, the Schedule of Classes indicates the associated fee.

Visual Resource Collections Fee

A charge of \$7 per course is assessed to defray the costs of course support materials, such as the slide library, for art history and criticism courses.

Writing Materials Fee

A fee of \$5 per course is assessed for English composition courses.

FEES FOR RESOURCE USE

Foreign Language Testing Fee

A charge of \$10 per course is assessed for testing to evaluate students for placement in foreign language programs.

Locker Fee

Students who wish to use lockers in the library and in the music, architecture and interior design, and visual arts divisions will be required to pay a \$15 per semester fee.

Teacher Placement Service Fee

Enrolled students and alumni may register for teacher placement services with the Office of Teacher Advising, Certification, and Placement for a setup fee of \$5. Others who wish to establish a placement file are charged a setup fee of \$35. A handling fee of \$5 is charged for each set of credentials provided after initial registration. All fees are payable in advance.

Tennis Center Fee

Dependents of full-time students and faculty and staff and their dependents may use the Tennis Center at specified hours and are charged fees according to the schedule below. Users who pay the Tennis Center fee have access to any of the other athletic facilities.

Lockers and locks are provided. In order for a spouse or child to use the Tennis Center, the faculty or staff member must first pay his or her use fee. Children must be accompanied by a parent or guardian.

Student Dependents. Spouses and children of full-time students are entitled to use the Tennis Center and other athletic facilities according to the schedule below. A full-time graduate student is one enrolled for at least 9 semester credit hours in the Fall or Spring Semester and for 3 semester credit hours in a five-week summer term or 5 hours in a 10-week summer term.

Category of User	Annual Cost
1. Full-time student's spouse	\$6 per semester
2. Full-time student's child	\$6 per semester

UTSA Personnel and Dependents. Full-time faculty and staff who wish to use the Tennis Center and other athletic facilities are charged fees according to the following schedule.

Category of User	Annual Cost
1. Faculty-staff member	\$12
2. Faculty-staff spouse	\$12
3. Faculty-staff child	\$12 (maximum of \$40 per family)

Guests. Guests of students, faculty, and staff may use the Tennis Center at certain hours for \$1.50 per person for a 1-1/2 hour reservation. Guest fees are payable at the Tennis Center office.

Thesis and Dissertation Binding Fee

A fee of \$10 per copy is charged for binding the five official copies of the thesis and five official copies of the dissertation filed with the University.

Thesis and Dissertation Publishing Fee

A microfilming publishing fee of \$40 for the master's thesis and \$50 for the dissertation is charged. A student may choose not to publish the master's thesis, but dissertation publication is required.

Thesis and Dissertation Copyright Service Fee

An optional copyright fee of \$35 may be made at the student's request.

Transcript Fee

A charge of \$5 is made for each UTSA transcript to be processed and mailed within 48 hours. A charge of \$8 is required if the transcript is to be provided within one hour. This fee must be paid before a transcript will be issued.

Number of Hours	Tuition: Resident/Military	Tuition: Nonresident	Student Services Fee	University Center Fee	Medical Services Fee	Automated Services Fee	Other Fees	Total: Resident/Military	Total: Nonresident
1	\$154.00	\$326.00	\$15.00	\$20.00	\$15.00	\$48.00	\$12.00	\$264.00	\$436.00
2	220.00	652.00	30.00	20.00	15.00	48.00	15.00	348.00	780.00
3	330.00	978.00	45.00	20.00	15.00	48.00	18.00	476.00	1,124.00
4	440.00	1,304.00	60.00	20.00	15.00	48.00	21.00	604.00	1,468.00
5	550.00	1,630.00	75.00	20.00	15.00	60.00	24.00	744.00	1,824.00
6	660.00	1,956.00	90.00	24.00	15.00	72.00	27.00	888.00	2,184.00
7	770.00	2,282.00	105.00	28.00	15.00	84.00	30.00	1,032.00	2,544.00
8	880.00	2,608.00	120.00	32.00	15.00	96.00	33.00	1,176.00	2,904.00
9	990.00	2,934.00	135.00	36.00	15.00	108.00	36.00	1,320.00	3,264.00
10	1,100.00	3,260.00	150.00	40.00	15.00	120.00	39.00	1,464.00	3,624.00
11	1,210.00	3,586.00	150.00	44.00	15.00	132.00	42.00	1,593.00	3,969.00
12	1,320.00	3,912.00	150.00	44.00	15.00	144.00	45.00	1,718.00	4,310.00
13	1,430.00	4,238.00	150.00	44.00	15.00	144.00	48.00	1,831.00	4,639.00
14	1,540.00	4,564.00	150.00	44.00	15.00	144.00	51.00	1,944.00	4,968.00
15	1,650.00	4,890.00	150.00	44.00	15.00	144.00	54.00	2,057.00	5,297.00
16	1,760.00	5,216.00	150.00	44.00	15.00	144.00	57.00	2,170.00	5,626.00
17	1,870.00	5,542.00	150.00	44.00	15.00	144.00	60.00	2,283.00	5,955.00
18	1,980.00	5,868.00	150.00	44.00	15.00	144.00	63.00	2,396.00	6,284.00
MIN	\$154.00	—	\$15.00	\$20.00	—	\$48.00	—	—	—
MAX	—	—	\$150.00	\$44.00	—	\$144.00	—	—	—
Per Grad. Hour	\$110.00	\$326.00	\$15.00	\$4.00	—	\$12.00	—	—	—

Tuition and fee amounts are subject to change by legislative action or by action of the Board of Regents of The University of Texas System. Changes in tuition and fees will be effective upon the date of enactment. Refer to each semester's Schedule of Classes for current tuition and fee amounts. Other semester fees include the library resources fee, \$2 per semester credit hour; Recreation Center fee, \$1 per

TUITION AND MANDATORY FEES—FIVE-WEEK SUMMER TERM

Number of Hours	Tuition: Resident/Military	Tuition: Nonresident	Student Services Fee	University Center Fee	Medical Services Fee	Automated Services Fee	Other Fees	Tuition: Resident/Military	Tuition: Nonresident
1	\$110.00	\$326.00	\$15.00	\$20.00	\$7.50	\$48.00	\$7.50	\$208.00	\$424.00
2	220.00	652.00	30.00	20.00	7.50	48.00	10.50	336.00	768.00
3	330.00	978.00	45.00	20.00	7.50	48.00	13.50	464.00	1,112.00
4	440.00	1,304.00	60.00	20.00	7.50	48.00	16.50	592.00	1,456.00
5	550.00	1,630.00	75.00	20.00	7.50	60.00	19.50	732.00	1,812.00
6	660.00	1,956.00	75.00	24.00	7.50	72.00	22.50	861.00	2,157.00
7	770.00	2,282.00	75.00	28.00	7.50	72.00	25.50	978.00	2,490.00
8	880.00	2,608.00	75.00	32.00	7.50	72.00	28.50	1,095.00	2,823.00
9	990.00	2,934.00	75.00	36.00	7.50	72.00	31.50	1,212.00	3,156.00
10	1,100.00	3,260.00	75.00	40.00	7.50	72.00	34.50	1,329.00	3,489.00
11	1,210.00	3,586.00	75.00	44.00	7.50	72.00	37.50	1,446.00	3,822.00
12	1,320.00	3,912.00	75.00	44.00	7.50	72.00	40.50	1,559.00	4,151.00
13	1,430.00	4,238.00	75.00	44.00	7.50	72.00	43.50	1,672.00	4,480.00
14	1,540.00	4,564.00	75.00	44.00	7.50	72.00	46.50	1,785.00	4,809.00
15	1,650.00	4,890.00	75.00	44.00	7.50	72.00	49.50	1,898.00	5,138.00
16	1,760.00	5,216.00	75.00	44.00	7.50	72.00	51.50	2,010.00	5,466.00
17	1,870.00	5,542.00	75.00	44.00	7.50	72.00	53.50	2,122.00	5,794.00
18	1,980.00	5,868.00	75.00	44.00	7.50	72.00	55.50	2,234.00	6,122.00
MIN	\$110.00	—	\$15.00	\$20.00	—	\$48.00	—	—	—
MAX	—	—	\$75.00	\$44.00	—	\$72.00	—	—	—
Per Credit Hour	\$110.00	\$326.00	\$15.00	\$4.00	—	\$12.00	—	—	—

UTSA Athletic Facility Use Fee

Athletic facilities available are the physical education gymnasiums, weight rooms, Tennis Center, and track. Lockers, locks, and towels are provided. In order to use these facilities, a current UTSA student identification card or membership card must be presented. Enrolled students may use the athletic facilities at no cost during normal hours of operation. Athletic facility memberships are available to faculty, staff, UTSA Alumni Association members, and spouses. Memberships may be purchased at the Equipment Room on the lower level of the Physical Education Building.

Authorized users may be accompanied by two guests per visit. Guest fee is \$5 per visit.

People using the athletic facilities must be at least 18 years old. All fees are nonrefundable.

Category of User	Annual Cost
UTSA student—currently enrolled	No cost
UTSA student—spouse	\$12
UTSA faculty or staff member	\$24
UTSA faculty or staff spouse	\$12
UTSA Alumni Association member	\$24
UTSA Alumni Association member spouse	\$12
Guests	\$5 per visit

PENALTY FEES

Late Payment Fee

A late fee of \$10 is added to a student's bill when an installment payment is not paid by the due date.

Library Fines for Overdue Materials and Lost or Damaged Items

Fines are charged for overdue library materials and for library items that are lost or damaged. UTSA Library regulations on borrowing and fines are available at the circulation desk.

Material	Fee
Interlibrary loans	Varies by cost
Lost or damaged items	\$25
Overdue: two-hour materials	\$1 per hour; maximum \$7.50 per item
Overdue: two-day materials	\$1 per day; maximum \$7.50 per item
Overdue: one- or two-week materials	\$0.25 per day; maximum \$7.50 per item
Recalled for reserve or for use by another patron after recall	\$1 per day after a five-day grace period

Parking Fines

Unpaid parking fines place a financial hold on student records and will interfere in the registration process or the transcript release process.

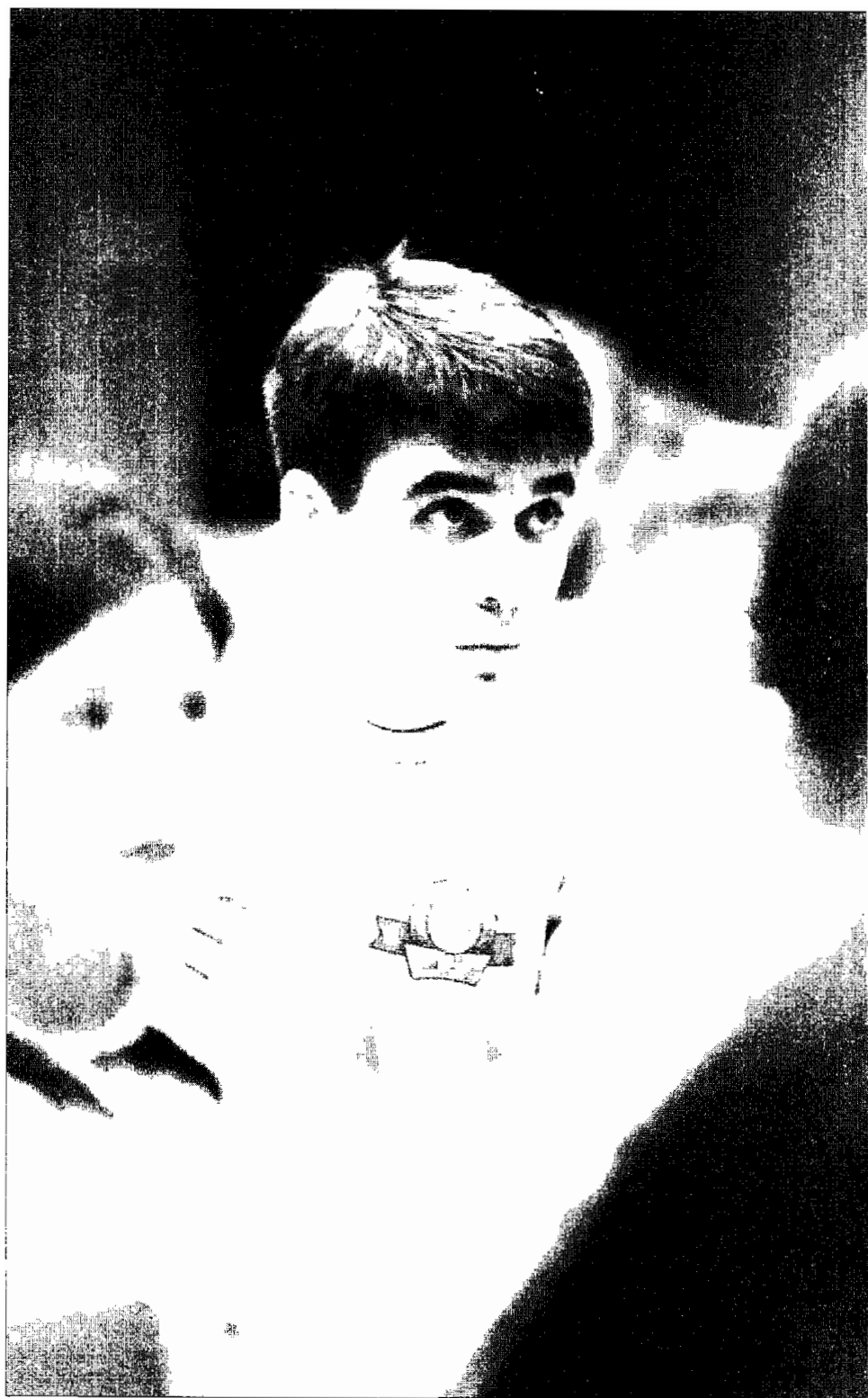
Property Damage Charges

Property damage charges are assessed to students for property loss, damage, or breakage; violation of rules in any University library or laboratory; failure to return keys issued by the University; or damage to or loss of any other UTSA property. Charges are billed directly to the student or are collected by the department upon reissue of supplies or property. Failure to pay the charges promptly results in denial of the student's readmission or reenrollment and the University's refusal to issue the student's transcript.

Returned Check Fee

A charge of \$15 is assessed for each returned check to offset the cost of handling. The University will not accept a check from a student who has wittingly or unwittingly written two bad checks.

4. ADMISSION



ADMISSION

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PHILOSOPHY

Admission requirements for graduate study at UTSA are designed so that admitted students will have a high probability of success in graduate-level academic work. Graduate study is much more than a continuation of undergraduate work and should be considered only by those students with the capacity for independent thought and investigation. Graduate programs at UTSA use selective entrance requirements in their admission of students. In addition to the University-wide admission requirements listed below, each graduate degree program specifies additional admission requirements, including scores on the Graduate Record Examination (GRE) aptitude test, the Graduate Management Admission Test (GMAT), other standardized examinations, a portfolio, an audition, or other indicators of preparation for graduate study. Information on the GRE and GMAT and test applications may be obtained from the Educational Testing Service, Box 899, Princeton, NJ 08540, or from UTSA Testing Services. The institution code for UTSA is 6919-5 for the GRE and 6919 for the GMAT. Applicants should refer to individual degree descriptions for additional admission requirements.

CLASSIFICATIONS AND REQUIREMENTS

Classifications of graduate admission require approval by the Dean of Graduate Studies, the administrative officer responsible for graduate education. The criteria for the various classifications of admission to UTSA are set forth below.

Graduate Degree-Seeking Students

A graduate degree-seeking student is one admitted to a graduate degree program. Admission as a graduate degree-seeking student may be unconditional, conditional, or conditional on academic probation.

Admission without Conditions

In order to be eligible for admission without conditions as a graduate degree-seeking student, an applicant normally must

1. Hold a baccalaureate degree from a regionally accredited college or university in the United States or have proof of equivalent training at a foreign institution.
2. Have a grade-point average of at least 3.0 (on a 4.0 scale) in the last 60 semester credit hours of coursework for the baccalaureate degree, as well as in all graduate-level work taken.
3. Have completed at least 18 semester credit hours (12 of which must be at the upper-division level) in the area or areas in which the graduate degree is sought or in related areas as determined by the Graduate Studies Committee for the proposed major.
4. Be in good standing at the last institution attended.
5. Be recommended for admission by the Graduate Studies Committee in the proposed major. The committee may examine a student on his or her previous preparation before a recommendation is made for the student to be admitted to the program.

Even though admission is based on the last 60 undergraduate hours attempted and all graduate coursework taken, students must list on the application for admission all colleges and universities attended and request that an official transcript from each institution be sent to the Office of Graduate Studies.

Conditional Admission

An applicant who has insufficient preparation in his or her intended graduate degree program, or who lacks certain supporting documentation required for unconditional admission, may be admitted conditionally to the graduate degree program upon recommendation of the Graduate Studies Committee in the proposed major and approval by the Dean of Graduate Studies. Conditions placed on admission may include

1. Submission of test scores or other indicators of preparation for graduate study that are unavoidably lacking at the time of admission.
2. Completion of additional coursework or other study to remove deficiencies, with such makeup work to be in addition to the regular degree requirements.
3. Completion of a given number of semester credit hours and the achievement of a minimum grade-point average, in no case lower than that required for a student to remain in the University as a graduate degree-seeking or special graduate student, if the student's grade-point average is less than that specified for unconditional admission. (See the section on Academic Standing in chapter 5, General Academic Regulations.)

Any conditions placed on the student's admission are included in the notification of admission. If conditions placed on admission are not met within the time specified by the Graduate Studies Committee and stated in the admission notice, the Dean will direct the Registrar to withdraw the student from the University. The student may petition for reinstatement under the provisions listed in this catalog. (See Petition for Reinstatement in chapter 5, General Academic Regulations.)

Admission on Academic Probation

An applicant who fails to meet the requirements for admission without conditions and is admitted on a conditional basis may be admitted on academic probation, upon recommendation of the appropriate graduate studies committee and approval by the Dean of Graduate Studies. Such admission requires that coursework taken during the first semester be completed with a grade-point average of "B" (3.0 on a 4.0 scale) or better. Failure to earn this average results in academic dismissal.

Denial of Admission as a Graduate Degree-Seeking Student

If an applicant is not eligible for either admission without conditions or conditional admission, the applicant is denied admission as a graduate degree-seeking student. In such cases, the appropriate graduate studies committee may recommend the applicant's admission or denial of admission as a special graduate student.

Special Graduate Students

A special graduate student is one admitted to UTSA for the purpose of enrolling in master's-level and/or undergraduate courses without currently entering a degree program. An applicant who elects to enroll as a special graduate student normally must

1. Hold a baccalaureate degree from a regionally accredited college or university in the United States or have proof of an equivalent degree from a foreign institution.
2. Have a grade-point average of at least 3.0 (on a 4.0 scale) in the last 30 semester credit hours of coursework for the baccalaureate degree as well as in all graduate-level coursework previously taken.
3. Be in good standing at the last institution attended.
4. Be recommended for admission as a special graduate student by the authorized representative of the discipline offering the graduate course or courses desired. The authorized representative of the discipline offering the course is the discipline graduate studies committee acting through its chair or through its graduate advisor of record. If there is no graduate studies committee for the discipline, the director of the division offering the discipline is the authorized representative. If the program is interdisciplinary, the Associate Dean for Graduate Studies and Research of the appropriate college is the authorized representative.

Even though admission is based on the last 30 undergraduate hours attempted for the bachelor's degree and all graduate coursework taken, students must list on the application all colleges and universities attended. Students must request that an official transcript be sent to the Office of Graduate Studies from institutions attended for the last 30 undergraduate hours for the bachelor's degree. Also, official transcripts must be requested from the institution conferring the last degree, plus all the institutions where graduate hours were earned.

Special graduate students are eligible to take any master's-level or undergraduate courses for which they have the necessary prerequisites, provided that space is available and that they have the approval of the instructor in which the course is taught. Students who wish to take a graduate course in a discipline other than that for which they have been authorized upon admission must obtain the approval of the authorized representative (as defined above) of the discipline offering the course.

Special graduate students are advised that

1. A maximum of 12 semester credit hours earned as a special graduate student may be applied toward a graduate degree, and then only when the student has been admitted as a graduate degree-seeking student and the credits earned for these courses have been evaluated and approved for this purpose by the appropriate graduate studies committee.
2. When teacher certification is involved, approval of the director of the Office of Teacher Advising, Certification, and Placement is required before the student enrolls to ensure that credit earned as a special graduate student can be applied to a graduate-level teacher certification program.
3. To continue in the University as a special graduate student in a subsequent semester, the student must meet the standards required to remain in UTSA as indicated in the section on Academic Standing.

4. Status as a special graduate student cannot be utilized when admission as a degree-seeking student is denied or when the graduate admissions file is incomplete.

Denial of Admission as a Special Graduate Student

An applicant who is denied admission as both a graduate degree-seeking student and a special graduate student may be eligible for admission as a special undergraduate student if admission requirements for that classification have been met. (See Special Students in chapter 4, Admissions, of the UTSA Undergraduate Catalog.)

Students holding bachelor's degrees who are admitted as special undergraduate students may enroll in undergraduate courses only. If they wish to take courses at the graduate level, they must obtain permission from the course instructor and the division director on the form provided for this purpose or apply and be admitted as special graduate students. Students may not be enrolled at the graduate and undergraduate levels at the same time.

Non-Degree-Seeking Graduate Students

An applicant who wishes to enroll for courses without pursuing a degree at UTSA should apply for admission as a non-degree-seeking graduate student. In order to qualify as a non-degree-seeking graduate student the applicant must

1. Hold at least a baccalaureate degree from a regionally accredited college or university.
2. Have a grade-point average of at least 3.0 (on a 4.0 scale) in the last 30 semester credit hours of coursework for the baccalaureate degree as well as on all graduate-level coursework taken.
3. Be in good standing at the last institution attended.
4. Be recommended for admission as a non-degree-seeking graduate student by the authorized representative of the discipline offering the graduate course or courses desired. The authorized representative of the discipline offering the graduate course is the discipline graduate studies committee, acting through its chair or through its graduate advisor of record. If there is no graduate studies committee for the discipline, the director of the division offering the discipline is the authorized representative. If the program is interdisciplinary, the Associate Dean for Graduate Studies and Research of the appropriate college is the authorized representative.

Even though admission is based on the last 30 undergraduate hours attempted for the bachelor's degree and on good standing at the last institution attended, students must list on the application for admission all colleges and universities attended. Students must request that an official transcript be sent to the Office of Graduate Studies only from institutions attended for the last 30 undergraduate hours for the bachelor's degree. A statement of good standing is required from the last institution attended.

Non-degree-seeking graduate students may register for any master's level or undergraduate course for which they have the necessary prerequisites, provided that space is available and that they have the approval of the course instructor. Students

who wish to take a graduate course in a discipline other than that for which they have been authorized upon admission must obtain the approval of the authorized representative (as defined above) of the discipline offering the course.

Non-degree-seeking graduate students are advised that

1. Credit earned as a non-degree-seeking graduate student will not count toward a degree at UTSA.
2. If the student plans to obtain a graduate degree at UTSA, an application for admission should be made as either a graduate degree-seeking student or a special graduate student.
3. When teacher certification is involved, approval of the Director of the Office of Teacher Advising, Certification, and Placement is required before the student enrolls to ensure that credit earned as a non-degree-seeking graduate student can be applied to a graduate-level teacher certification program.

International Students

Applications from persons holding nonpermanent visas will be processed as international. This includes applications received from other countries and requests to transfer from a U.S. college or university. Applicants must

1. Meet the graduate admission requirements for graduate degree-seeking students. Applicants who will be on a student visa may not be admitted other than as graduate degree-seeking students. (An I-20 form is not issued to non-degree-seeking or special graduate students.)
2. Submit scores from the Test of English as a Foreign Language (TOEFL). Students who need to take this test should write to the Educational Testing Service, Box 899, Princeton, NJ 08540, requesting information on taking the TOEFL. The code for UTSA is 6919. A minimum score of 500 (paper version) or 173 (comprehensive version) on the TOEFL is required. TOEFL scores may be waived for international students from countries where English is the primary language of instruction and the principal language spoken in the home; or for noncitizens of the United States earning a bachelor's degree or higher in the United States or other English-speaking countries. Participation in UTSA's English Language Assessment Program before registration is required of students with TOEFL scores below 600 (paper version) or 250 (computerized version). Based on this assessment, students needing additional instruction in English are required to enroll in appropriate English for International Students (EIS) courses.
3. Submit a statement guaranteeing the student's ability to pay all expenses while a student at UTSA, if attendance under the F-1 (student) visa is anticipated. The statement may be sent from a parent or guardian when endorsed by a bank or other reliable institution, or from a U.S. citizen who will accept responsibility for the student's financial needs.
4. Have an application, \$25 nonrefundable application fee and supporting credentials on file in the Office of Graduate Studies by the appropriate application deadline. International students applying for readmission are only required to pay a \$25 nonrefundable application fee. The \$25 nonrefundable application fee is also charged upon reapplication for admission following academic dismissal. The application deadlines for master's-level applicants are as follows:

Fall Semester	June 1
Spring Semester	October 15
Summer Semester	March 1

The deadline for doctoral applicants is January 1.

The above criteria serve as guidelines for admission for international students. The credentials of each applicant are examined on an individual basis by the Office of Graduate Studies and the appropriate graduate studies committee, with admission granted only to those who show promise of success in graduate study at UTSA.

Academic Fresh Start

An applicant who has earned a baccalaureate degree under the Academic Fresh Start statute, Texas Education Code § 51.931, will be evaluated on only the grade-point average of the coursework completed for that baccalaureate degree and the other criteria stated herein.

Procedures for Teacher Certification or for Certificate Endorsements at the Graduate Level

An applicant who desires to work on teacher certification requirements and holds a bachelor's degree should apply either as a graduate degree-seeking student or special graduate student (not special undergraduate student) to the Graduate Studies Committee of the Division of Education for certification and endorsement requirements other than endorsements in Bilingual Education and English as a Second Language. Applicants for these endorsements should apply for admission as either a graduate degree-seeking student or special graduate student to the Graduate Studies Committee of the Division of Bicultural-Bilingual Studies. A student who is simultaneously seeking a master's degree in education should apply to the Division of Education.

When unconditional admission has been granted, the student should apply to the Office of Teacher Advising, Certification, and Placement for an analysis of his or her transcripts and for an official outline of a program that will ensure meeting the requirements to obtain a teacher's certificate or a certificate endorsement. In some cases it may be possible to meet certification requirements within a degree program; in other cases the student may need to take additional work for the certificate beyond that required for the graduate degree. The completion of degree requirements does not guarantee completion of Texas certification requirements. The student's program advisor and the Office of Teacher Advising, Certification, and Placement will assist the student in planning an appropriate program of study.

Any student seeking a teaching certificate in the state of Texas must pass the Texas Academic Skills Program test. For further information on the TASP requirement and exemptions for teachers, a student should contact the Office of Teacher Advising, Certification, and Placement.

Recommendations for teacher certification (to the Texas Education Agency) are made by the Office of Teacher Advising, Certification, and Placement only after all requirements have been met and the student has officially requested such recommendation.

A brochure summarizing education certificate and endorsement requirements is available from the Office of Teacher Advising, Certification, and Placement in the Division of Education.

Declaration of Previous College Work Attempted

Students are not at liberty to disregard previous college work attempted. Students transferring to UTSA must list all colleges attended on their UTSA application for admission. Failure to do so will result in the rejection of the application, withdrawal of any offer of acceptance, cancellation of enrollment, permanent dismissal from the University, or other appropriate disciplinary action. Students should consult the admission categories listed above to learn which transcripts they need to have sent to the Office of Graduate Studies.

APPLICATION DATES

Master's Level

Students applying for admission as master's degree-seeking, special, or non-degree-seeking students may apply for admission as early as nine months before the beginning of the semester in which they wish to begin graduate study. Because of the time needed to prepare graduate summaries, students are encouraged to have their admission file complete at least one month before the application deadline. Application forms and instructions are available from the Office of Graduate Studies. The completed application form, \$25 nonrefundable application fee, and all required supporting documents must be on file with the Office of Graduate Studies by the appropriate application deadline. The application deadlines for master's-level applicants are

Fall Semester	July 1
Spring Semester	December 1
Summer Semester	May 1

Doctoral Level

The deadline for doctoral applicants is February 1. Students enrolling in cooperative or joint programs between UTSA and other institutions must satisfy admission dates (and procedures) of the other institutions as well as those of UTSA. Failure to meet these admission deadlines will defer admission until a subsequent semester.

ADMISSION PROCEDURES

Each applicant for admission is responsible for ensuring that all required application materials (completed application form, \$25 nonrefundable application fee, test results, required transcripts, etc.) are on file in the Office of Graduate Studies by the admission deadlines. Admission is not granted until the applicant's file is complete. Documents submitted in support of an application become the property of UTSA and cannot be returned.

Students who apply for admission to UTSA for any semester and do not register for courses must reapply for admission if they wish to enroll at a later date. Any subsequent application for admission must be in accordance with current admission requirements. New transcripts, test scores, and other supporting documents are required after one year, since files for admitted students who do not register for courses are not retained after that period. (See program descriptions in chapter 8, Graduate Program Requirements and Course Descriptions, for specific program admission requirements.)

READMISSION

UTSA graduate students who have not been in attendance for two full years must file an application for readmission, along with a \$25 nonrefundable application fee, by the application deadline.

Former students returning to UTSA who have attended other institutions of higher education since they were last enrolled at UTSA must submit an official transcript from each institution. Eligibility for readmission of any former student depends on the student's academic status at the conclusion of the last UTSA semester of enrollment and performance on any subsequent college or university work attempted. Readmission must be recommended by the appropriate graduate studies committee.

5.
GENERAL ACADEMIC
REGULATIONS



GENERAL ACADEMIC REGULATIONS

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REGISTRATION PROCEDURES

Registration for Classes

All students who attend classes at UTSA must be officially registered or approved as auditors. Registration instructions are included in the Schedule of Classes issued for each semester. Questions regarding registration should be directed to the Office of Admissions and Registrar.

UTSA does not guarantee the availability of particular courses or sections, and admission to classes is permitted only until the maximum number of students allowable in any section has been reached. The University reserves the right to cancel any course or section in which the number of registrants does not warrant its continuation.

Late Registration

Late registration permits students who have been admitted to UTSA to register for classes during an allotted time indicated in the Schedule of Classes issued each semester. Instructions for late registration are available at the Office of Admissions and Registrar. *Students are not permitted to register after the close of the late registration period.*

Students who register late are charged an additional \$5 the first day of late registration, and an additional \$2.50 per day thereafter, to a maximum of \$15 for any one semester. This fee is nonrefundable.

Students who register late are responsible for completing any work missed in the courses for which they enrolled during the time the course was in session prior to their being registered. In addition, since many courses will have been closed at capacity, late registrants may need to select their courses from a reduced schedule.

Adding Courses

Students who are registered for courses may add courses to their schedules for a limited time at the beginning of the semester. In Spring or Fall Semesters, courses may be added in the first week of classes. In Summer Semesters, classes may be added in the first two days of the term. Adding a course after this time requires the approval of the course instructor, the student's advisor, and the director of the division that offers the course.

After the Census Date in any semester, students may not add courses except in extremely rare extenuating circumstances as approved by the Dean. The Census Date for Spring or Fall Semesters is the 12th class day, and for summer terms, the fourth class day. The University Calendar in the Schedule of Classes, issued each semester, indicates the deadlines for adding courses.

There is a processing fee for adding courses. The fee will be charged only from the first through the 12th class days during the Fall or Spring Semesters and from the first through the fourth class day during summer terms. Please see the Schedule of Classes for information on the amount of the fee and the procedure for adding courses.

Dropping Courses

Students may drop courses from their schedules for a limited time each semester. The University Calendar in the Schedule of Classes, issued each semester, indicates the deadlines for students to drop courses each term.

Courses officially dropped before the Census Date do not appear on a student's transcript. The Census Date for Spring or Fall Semesters is the 12th class day; for summer terms, the fourth class day. There is a processing fee for dropping courses from the first day of classes through the Census Date.

Students who drop courses between the Census Date and the Automatic "W" Date will have a record of the courses on their transcripts with an automatic grade of "W." The Automatic "W" Date is the last day of the ninth week of Spring or Fall Semesters, or of the third week of a five-week summer term, or of the sixth week of a 10-week summer term. The change becomes official after it is processed by the Office of Admissions and Registrar. Students dropping courses after the Census Date are not charged the processing fee. Students may not elect to drop an individual course after the Automatic "W" Date. Students withdrawing from the University should refer to the section of this chapter on withdrawal from the University.

Administrative Drops

Administrative drops are not student options. Instructors may drop a student for nonattendance during the regular drop period (through the first nine weeks of Spring or Fall Semesters, the first three weeks of a five-week summer term, or the first six weeks of a 10-week summer term). The student will receive a grade of "W."

After the official drop period, an instructor may recommend to the Dean that a student be dropped from class when the instructor can show that unusual circumstances exist to warrant such action. If the Dean grants the drop, the student will receive a grade of "W" (if passing at the time of the drop) or a grade of "F" (if failing at the time of the drop).

Auditing Courses

UTSA students and nonstudents who wish to audit a course may do so with the approval of the instructor and the director of the division in which the course is offered, provided there is space in the classroom after registered students have been accommodated. A course must achieve its minimum size without auditors.

Auditing entitles a student to listen and observe. Participation of an auditor in class is at the discretion of the instructor. No UTSA credit is granted for courses that are audited; no official record is made of enrollment in classes on an audit basis. Due to the format of studio/laboratory use, auditors are approved for art courses. Students not enrolled in courses at UTSA are not allowed to audit courses that require the use of the University computing system.

Auditors must submit a Request to Audit form to the Office of Admissions and Registrar. A UTSA student pays an auditing fee of \$25 per course; auditors who are not registered UTSA students must pay an auditing fee of \$50 per course. Persons

over 65 years of age are permitted to audit without paying an auditing fee if space is available.

Permission to audit must be obtained and fees paid from the first day of class through the Census Date. Students who register for a course and later want to change that course to an audit must officially drop that course before submitting a Request to Audit form.

Nonstudent auditors who wish to have library privileges may receive them by filling out a Friends of the UTSA Library application at the circulation desk in the UTSA Library and paying a nonrefundable fee. There are limits on the services offered to Friends of the UTSA Library cardholders; further details are available from the circulation desk. Nonstudent auditors who want UTSA parking privileges should go to the University Police Traffic Office with their validated Request to Audit form.

Cancellation of Enrollment

Students who fail to fulfill admission, registration, or financial requirements or divisional admission conditions or who otherwise fail to adhere to academic regulations may have their enrollment for that semester cancelled. Students may apply for readmission to a subsequent semester, provided they have resolved the cause of the cancellation.

Withdrawal from the University

Students who find it necessary to withdraw from UTSA (drop all courses for which they are enrolled) must complete a Withdrawal form in the Office of Admissions and Registrar.

Students may not withdraw from UTSA later than the first day of the week preceding final examinations. Students who officially withdraw from UTSA during the regular drop period (through the first nine weeks of Spring or Fall Semesters, the first three weeks of a five-week summer term, or the first six weeks of a 10-week summer term) receive a grade of "W" in all classes. Students who officially withdraw after the regular drop period receive a grade of "W" for each class they were passing at the time of withdrawal and a grade of "F" for each class they were not passing.

Students who withdraw from all classes are subject to UTSA's academic probation and dismissal regulation. Students withdrawing should refer to the regulations on refunds of tuition and fees, readmission policies, and requirements for maintaining registration. Students withdrawing from the University, regardless of the date, will not be charged the add/drop processing fee.

RECORDS AND CLASSIFICATION OF STUDENTS

Classification Terms

Graduate Degree-Seeking Student. A student who is admitted to a graduate degree program, unconditionally, conditionally, or conditionally on academic probation.

Special Graduate Student. A student who is admitted to UTSA for the purpose of enrolling in graduate and/or undergraduate courses in one or more colleges of the University without entering a degree program.

Non-Degree-Seeking Graduate Student. A student who registers for courses but does not intend to work toward a degree at UTSA.

Note: A graduate student who wishes to work on a program to meet the requirements for teacher certification or for a certificate endorsement must be admitted as a graduate degree-seeking student or special graduate student (not a special undergraduate student). He or she must apply to the Office of Teacher Advising, Certification, and Placement for an official analysis of the requirements that must be met before he or she can be recommended for certification.

Definition of a Full-Time Graduate Student

A full-time graduate student (degree-seeking, special, or non-degree-seeking) is enrolled in 9 or more semester credit hours of graduate credit during a Fall or Spring Semester or in 5 or more hours of graduate credit during the entire Summer Semester.

Verification of Enrollment

Enrolled students with outstanding student loans should have a verification of enrollment sent to their lending agencies each semester. Enrolled students who are receiving grants or scholarships should check to see if their providers require a verification of enrollment each semester.

Students should make requests for verification in writing to the Office of Admissions and Registrar. Verifications are prepared and mailed after the Census Date (the 12th class day of Fall or Spring Semesters and the fourth class day of a summer term).

Transcripts

Official transcripts of coursework taken at UTSA are available in the Office of Admissions and Registrar. Requests for transcripts must be in writing and bear the signature of the student whose record is requested. A fee is charged for each copy of the transcript and must be paid in advance.

Transcripts from other institutions submitted to UTSA become the property of the University and are not reproduced and/or mailed to other institutions, agencies, or individuals as an official transcript.

Documents submitted by students whose last attendance at UTSA was before Summer 1993 are no longer available for duplication.

Official transcripts will not be issued for students who have a financial obligation or other commitment outstanding to the University until the obligation is cleared.

Release of Academic Records

Official certifications regarding the academic performance or status of a student or former student of UTSA are made by the Office of Admissions and Registrar.

UTSA transcripts and other information from a student's academic records are released by the Office of Admissions and Registrar only upon written request from the student or other person authorized by law under the Family Educational Rights and Privacy Act of 1974 and when payment of the appropriate fee is made. Exceptions may be made in response to a subpoena or court order, under other circumstances as allowed under the Family Educational Rights and Privacy Act of 1974, or as provided in the policy on releasing directory information set forth in chapter 2 (About UTSA) of this catalog.

Change of Major, Degree, or Classification

Students who wish to change their majors, degree objectives, or classifications must obtain the required forms at the Office of Admissions and Registrar. The change is not official until the form has been completed and filed with the Office of Graduate Studies and the student is admitted to the new degree program, certification program, or classification. Classification changes (special graduate to degree-seeking) requested during any semester will not be effective until the following semester.

Change of Name

A student's name on official records at UTSA is the name under which the student applied for admission, unless a Change of Name form has been processed through the Office of Admissions and Registrar. The official University transcript carries the current name and the most immediate previous name, if any. Change of Name forms should be supported by appropriate legal documentation, except that upon marriage the student may declare the newly taken name.

Change of Address

Enrolled students who have changed their addresses must notify the Office of Admissions and Registrar on the appropriate form. Official notification of change of address is necessary for proper identification of students' records and for accurate mailing of correspondence, grade reports, transcripts, registration instructions, and information pertaining to graduation requirements. Students who have a degree application on file in the Office of Admissions and Registrar should specify if the address change also affects the address to which the diploma is to be mailed.

COURSES

Course Numbering System

Courses are designated by four-digit numbers following a two- or three-letter abbreviation of the subject the course is in. The first digit indicates the level of the course. Courses beginning with "0" are remedial and may not be counted toward a degree. Courses beginning with "1" or "2" are undergraduate lower-division (freshman

and sophomore level). Courses beginning with “3” or “4” are undergraduate upper-division (junior and senior level). Courses beginning with a “5” or higher are graduate-level courses.

The second and third digits are used within the colleges by each division to distinguish individual courses. The fourth digit indicates the semester-credit-hour value of the course.

The number of lecture and laboratory hours per week are provided in parentheses in the course description sections immediately following the course number and title. For example, (3-0) indicates three hours of lecture and zero hours of laboratory per week.

Prerequisites

Prerequisites are stated for many courses listed in this catalog. Prerequisites advise students of the background expected of all students in the course. It is the student’s responsibility to be sure that all prerequisites are met before enrolling in any course. When a student has not met the specific prerequisites listed, he or she may, under special conditions, obtain permission to register from the instructor of the course.

GRADES

Explanation of Credit, Grading System, and Symbols

Hours Attempted. The number of hours attempted is the total number of semester credit hours for which a student has enrolled and received grades of “A,” “B,” “C,” “D,” or “F,” except as provided for repeated courses.

Hours Earned. The hours earned by a student are the number of semester credit hours earned in which grades of “A,” “B,” “C,” “D,” or “CR” have been received.

Grade-Point Average. The UTSA grade-point average (GPA) is determined by dividing the number of grade points earned at UTSA by the number of semester credit hours attempted at UTSA. Credits and grades for work completed at other institutions or credits earned by examination are not included in the UTSA grade-point average.

The following table explains UTSA grade symbols:

Grade Symbol	Grade Points	Meaning of Grade Symbol
A	4	<i>Outstanding</i>
B	3	<i>Above Average</i>
C	2	<i>Average</i>
D	1	<i>Below Average</i> (see Academic Probation)

Grade Symbol	Grade Points	Meaning of Grade Symbol
F	0	<i>Failure</i> (see Academic Dismissal)
CR	0	<i>Credit</i> . Indicates successful credit by examination (see Credit by Examination) or through faculty evaluation of selected internships and practica.
NC	0	<i>No Credit</i> . Indicates unsatisfactory progress.
W	0	<i>Withdrawal</i> . Indicates that between Census Date and the Automatic "W" Date a student voluntarily and officially dropped a course, ceased to attend without dropping it, or was dropped by the instructor. After the Automatic "W" Date, "W" indicates that a student was passing at the time he or she dropped the course, ceased to attend, or was dropped by the instructor.
IN	0	<i>Incomplete</i> . Assigned at the discretion of the instructor; see details below.
NR	0	<i>No Report</i> . Assigned only by the Registrar when unusual circumstances do not allow a student's grade to be entered by the deadline for processing grades. It is replaced with the official grade as soon as possible.
EP	0	<i>Postponement of Final Examination</i> . Indicates that a student has been allowed to postpone a final exam. Procedures for such postponement are covered in this chapter.
EX	0	<i>Expelled</i>
RP	0	<i>Research in Progress</i> . Used to denote research in progress only for ART 6843, MUS 6913, Directed Research Courses (5971-3), and Master's Thesis and Dissertation courses. When the project, thesis, or dissertation is complete, the "RP" grades will be changed to letter grades up to the maximum number of semester credit hours approved for the specific degree.

Credit/No Credit. Students may earn "CR" or "NC" grades only for specific courses listed in the catalog as graded on a credit/no credit basis.

Incomplete. The grade "IN" is given by an instructor to indicate that some part of a student's work in a course has, for good reason, not been completed, while the rest of the student's work was satisfactorily completed. The Incomplete allows a student to complete the course without repeating it. Incomplete may not be assigned when a

definite grade can be given for the work done. The student must have been in attendance at least three-fourths of the semester.

Whenever a grade of Incomplete is assigned, the instructor is required to file a Requirements for Removal of Incomplete report with the Office of Admissions and Registrar.

Incomplete work must be made up no later than the end of the final examination period one year from the semester the Incomplete was received, and before the student's graduation. If the work is not completed within this time, the "IN" remains on the student's record, and credit may be earned only when the student reenrolls in the course and completes the entire course satisfactorily. The time limit does not apply to graduate-level thesis, internship, or dissertation courses, except that an "IN" cannot be removed after a degree is awarded. The time limit does apply to all other graduate courses, including special problems and independent study courses.

IN NO INSTANCE WILL GRADES BE CHANGED AFTER ONE CALENDAR YEAR.

Repeating Courses

Courses designated "may be repeated for credit" in the catalog may be repeated with both semester credit hours and grade points earned being counted. Otherwise, students at the graduate level may not elect to repeat courses for the purpose of raising a grade. However, when a course was taken more than six years ago, or upon the recommendation of the appropriate graduate studies committee, the course may be repeated; in such cases, both grades in the course appear on the transcript and both are counted in the student's grade-point average. Only semester credit hours for the repeated course may be counted toward the degree.

Administrative Procedures

Reporting of Grades by the Faculty

Grades are reported by course instructors every semester and are due in the Office of Admissions and Registrar 48 hours following the final examination. Final grades cannot be withheld, nor can reporting of them be deferred. Absence from a final examination should be reported as "EP" if a postponed examination has been authorized in accordance with the Postponement of Final Examination Procedures set forth in this chapter.

Grade Reports

The Office of Admissions and Registrar mails final grades to students as soon as they are compiled after the close of each semester and each summer term. The grade report reflects the grade that appears on the instructor's final grade sheet; subsequent changes are not included. Grades are mailed to the address on file in the Office of Admissions and Registrar. Only one grade report is mailed; additional copies are not available. Grade reports may be withheld for any student who owes tuition and fees to the University.

Class Participation Policy

Students are expected to regularly attend and participate in all meetings of courses for which they are registered. The instructor is responsible for communicating the participation requirements for each course to students. Subject to UTSA policies on class absences related to observance of the religious holy days, the instructor determines classroom participation requirements and policies on making up work missed during an absence.

Students who expect to be absent from class for observance of a holy day must notify the instructor of the course(s) no later than the 15th day of classes. The notification must be in writing and must be delivered by the student either personally to the instructor of each class, or by certified mail, return receipt requested, addressed to the instructor of each class. A religious holy day is a day observed by a religion whose places of worship are exempt from property taxation under §§ 11.20, Tax Code. Instructors shall allow a student who is absent from classes for the observance of a religious holy day to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.

When, in the judgment of the instructor, a student has been absent excessively, the instructor should report the absences to the dean of the college in which the course is offered and recommend dropping the student from the course with a grade of "W" or "F." If the dean approves the recommendation, it will be reported to the Office of Admissions and Registrar, which advises the instructor and student of the action taken.

Students who enroll for a course and then do not attend are considered absent from class until they officially drop the course and will receive a grade of "F."

Grade Grievance Procedure

In resolving any student grievance regarding grades or evaluations, the student must first make a serious effort to resolve the matter with the faculty member with whom the grievance originated. Individual faculty members retain primary responsibility for assigning grades and evaluations. The faculty member's judgment is final unless compelling evidence shows discrimination, differential treatment, or factual mistake. If evidence warrants appeal, then normal academic channels are Division Director, Dean, and Dean of Graduate Studies.

Grade appeals above the level of the Dean must be submitted in writing on the Student Academic Grievance form for Appeal of a Grade, available in the offices of division directors.

IN NO INSTANCE WILL GRADES BE CHANGED AFTER ONE CALENDAR YEAR.

Change of Grades

Individual faculty members retain primary responsibility for assigning grades and evaluations. The faculty member's judgment is final unless compelling evidence shows discrimination, differential treatment, or factual mistake. Under unusual circumstances, however, grades may be assigned or changed by someone other than the faculty member.

Grades may be changed or assigned through administrative channels in the following procedures.

1. Circumstances when an assigned grade of "A," "B," "C," "D," or "F" might be changed. In this case, the formal appeals process stated in the catalog must be initiated by the student. Because a grade change of this type is related directly to issues of academic freedom, a committee composed of qualified faculty should be appointed by the appropriate graduate studies committee to assess the academic merits of the appeal. The committee report should weigh heavily in the subsequent administrative review by the Division Director, Dean, and Vice President for Academic Affairs. Grades may be changed only if compelling evidence demonstrates discrimination, differential treatment, or factual mistake.
2. Circumstances when an assigned grade of "EP," "IN," or "NC" might be changed. Under unusual circumstances, a faculty member of record may be unable to assign grades in a timely manner. Examples include death or incapacitation of a faculty member; a faculty member who permanently leaves the University and refuses or fails to respond; and a faculty member who is on leave and cannot be reached.

Such circumstances are brought to the attention of the Division Director through available personnel information or communication from the faculty member or student. Whenever possible, the faculty member may designate another qualified faculty member to evaluate the work and assign the grade. In circumstances where the faculty member is unable to make such a designation or cannot be contacted in a timely manner, and where there is a compelling need to complete the grading process, the appropriate graduate studies committee will designate a qualified faculty member to evaluate the work and assign the grade.

IN NO INSTANCE WILL GRADES BE CHANGED AFTER ONE CALENDAR YEAR.

Postponement of Final Examination Procedures

A student who is compelled to be absent from a final examination because of illness or other imperative reason should, either in person or through a friend, request permission of his or her instructor to postpone the examination. This request should be made as soon as the student knows he or she will be compelled to be absent.

The instructor records the symbol "EP" on the final grade report for a student who has been permitted to postpone an examination.

The examination should be given as soon as possible (preferably during the same examination period), but not later than 30 days after the original examination period. If for good reason the student cannot take the examination within the 30-day period, the examination may be scheduled at any time convenient to the instructor, except that in no case will it be given later than the Fall or Spring Semester following the one for which the postponed examination was approved. If a postponed examination is not taken before the end of the next Fall or Spring Semester, the grade in the course is changed to "F."

ACADEMIC STANDING

A student's academic standing, whether the student is a graduate degree-seeking student, a special graduate student, or a non-degree-seeking graduate student, is defined as either good standing, academic probation, or academic dismissal.

Good Standing

Good standing is the absence of any contingency that would result in the student's being on academic probation or academic dismissal.

Academic Probation

Academic probation describes the standing of a student at the graduate level who is in one of the following categories:

1. a student who fails to achieve a grade-point average in any term at UTSA of 3.0 or higher, irrespective of level of courses taken
2. a student who receives a grade of "D" in any course in a term
3. a student who does not meet all requirements for unconditional or regular admission and who, by special action, is admitted on academic probation
4. a student who has been reinstated following academic dismissal.

Academic probation is cleared only when none of the above criteria apply and when the student achieves an overall grade-point average of 3.0 as a graduate student at UTSA. Students on academic probation are encouraged to discuss their status with their academic advisors.

Academic Dismissal

Academic dismissal occurs in either of the following cases:

1. When a student at the graduate level earns a grade-point average of less than 2.0 in any term.
2. When a student at the graduate level earns a grade of "F" in any course.
3. When a student at the graduate level who is on academic probation during a term would again be placed on academic probation under the provisions of academic probation set forth above. If, however, the student's UTSA grade-point average for the term is at least 3.0, he or she will be continued on academic probation.

Petition for Reinstatement

A student who has been dismissed academically may petition for reinstatement. Normally, such reinstatement is requested after a student has remained out of school one long semester; however, under exceptional circumstances, a petition may be considered earlier. A letter containing all explanations, recommendations, or doctors' statements in support of the student's request for reinstatement should be submitted to the Dean of Graduate Studies on or before June 15 for Fall Semesters, October 15 for Spring Semesters, or March 15 for Summer Semesters.

The appropriate graduate studies committee will review the petitioner's letter and academic record and make a recommendation concerning reinstatement to the Dean of Graduate Studies. If the Petition for Reinstatement is disapproved, the student may not file another petition until the following semester.

SCHOLASTIC DISHONESTY

The integrity of a university degree depends on the integrity of the work done for that degree by each student. The University expects that a student should maintain a high standard of individual honor in his or her scholastic work. [*Rules and Regulations of the Board of Regents*, Part One, Chapter VI, 3.(17).]

Scholastic dishonesty includes, but is not limited to

- cheating on a test or other class work
- plagiarism (the appropriation of another's work and the unauthorized incorporation of that work in one's own written work offered for credit)
- collusion (the unauthorized collaboration with another person in preparing college work offered for credit).

Should a student be accused of scholastic dishonesty, the faculty member may initiate disciplinary proceedings through the Division Director, the Dean of the College, and the Student Judicial Affairs Coordinator. (See *Student Discipline* or *Scholastic Dishonesty at UTSA*, both of which may be obtained from the Student Judicial Affairs Coordinator.)

6.
MASTER'S DEGREE
REGULATIONS



MASTER'S DEGREE REGULATIONS

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DEGREE REQUIREMENTS

University-wide Requirements

In order to receive a master's degree from UTSA, the following minimum requirements must be met:

1. The student must be admitted as a graduate degree-seeking student for the degree sought.
2. The student must remove all conditions of admission, if any were assigned at the time of admission.
3. Subject to the six-year time limitation, the student must complete satisfactorily all coursework as specified in his or her discipline's program of study, and, if Option I is selected, must complete satisfactorily the thesis as outlined in the Options for Master's Degrees section of this chapter.
4. The student must formally apply for the degree and pay the required fee in the Office of Graduate Studies no later than the deadline for the semester in which he or she intends to graduate (deadlines are published in class schedules).
5. The student must complete satisfactorily the comprehensive examination, except as provided by the M.B.A. degree.
6. The student must meet the grade-point average requirement of 3.0 or higher (on a 4.0 scale) in all work counted as part of the degree program.
7. No courses in which grades of less than "C" (below 2.0 on a 4.0 scale) were earned may be applied to a graduate degree, nor may courses for which the grade of "CR" was earned by examination be applied to minimum degree requirements. Credit for selected internships and practica in which a grade of "CR" was earned may be applied to minimum degree requirements upon approval of the Graduate Studies Committee.
8. The student must be in good standing at the close of the semester in which the degree is to be received.

Detailed descriptions of each of the above requirements are included in this catalog.

Comprehensive Examination

A candidate for a master's degree (other than candidates for the M.B.A. degree, who are required to complete MGT 5903 with a grade of "B" or better) must, in addition to other requirements, pass a comprehensive examination which may be oral, written, or both. Students must be registered during any semester or term in which they are taking required examinations. Comprehensive examinations are given only to those students who have complied with the following requirements:

1. completion of all conditions of admission, if any were assigned at the time of admission
2. completion of all special admission requirements for the degree program, if any
3. be in good standing
4. an acceptable program of study in the discipline in which the degree is sought
5. if a thesis is to be written, selection of supervising professor and thesis committee and acceptance of thesis topic

6. enrollment in 6961 Comprehensive Examination in the semester the comprehensive examination is taken, if registered for no other courses that semester.

Options for Master's Degrees

Two options are available for most master's degree programs. Refer to specific program requirements in chapter 8, Graduate Program Requirements and Course Descriptions, to determine whether a program offers both options.

Thesis Option (Option I)

The candidate for a Master of Arts, Master of Science, Master of Business Administration, or Master of Science in Accounting degree is required to complete the required number of semester credit hours in coursework approved by the appropriate graduate studies committee, including 6 semester credit hours for a thesis. The thesis is subject to approval by the student's program advisor, thesis committee, and graduate advisor, and the Dean of Graduate Studies.

Students receiving advice and assistance from a faculty member in the preparation of a thesis must enroll in the appropriate thesis course (if necessary, for multiple semesters) until final approval of the completed thesis has been given and three copies have been filed with the Dean of Graduate Studies.

Requirements for Thesis. The following steps for completing a thesis as part of a master's degree are the responsibility of each degree candidate selecting Option I:

1. Secure the approval of the Thesis Director, who is also Chair of the Thesis Committee. The Thesis Committee consists of the Thesis Director and two additional members of the graduate faculty appointed by the College Dean. The student is expected to work closely with the Thesis Director in selecting the thesis topic and in completing other details of his or her study.
2. Submit a preliminary draft for approval by the Thesis Director no later than 45 calendar days before final examinations of the semester in which the degree is to be awarded. The first draft copy should be corrected, legible, and typewritten. The format of the thesis must follow University regulations. The detailed requirements are available from the Office of the College Dean.
3. Secure approval of the draft by the Thesis Committee. This step is intended to ensure that the thesis meets the required standards for content, expression, format, spelling, and accuracy. Candidates are responsible for meeting the standards of those reading and approving the thesis.
4. Submit the approved draft to a typist. The approved draft of the thesis is then to be typed in acceptable form.
5. Submit the final copy of the thesis to the Thesis Director and Thesis Committee no later than 20 calendar days before final examinations of the semester in which the degree is to be awarded. This copy of the thesis must be the original and, if acceptable, must be signed by the Thesis Director and members of the Thesis Committee. Before submission of the thesis to the Office of Graduate Studies through the Dean of the College for final acceptance, the Office of Graduate Studies must certify that it conforms to the format prescribed in the *Guide for the Preparation of a Master's Thesis* and approve the method of duplication.

6. File five unbound copies, including the original, of the approved thesis with the Office of the College Dean at least 10 days before the last day of classes of the semester in which the degree is to be awarded. The copies are transmitted by the Dean to the library, where they are bound. One copy each will be sent to the student's program office, the dean of the appropriate college, and the Dean of Graduate Studies. The student will be notified by the library when personal copies are available for pickup. (A fee of \$10 per copy will be charged for binding the official copies of the thesis.)
7. It is customary that copies of the thesis be presented to the Thesis Director and members of the Thesis Committee. Arrangements and expenses for binding of copies are the responsibility of the student. Copyright may be arranged by the student and will be at his or her expense.

Nonthesis Option (Option II)

For a master's degree under Option II, a student can meet requirements without writing a thesis. Instead, the student is required to complete a program of coursework, as indicated by specific program requirements in chapter 8, Graduate Program Requirements and Course Descriptions, approved by the Graduate Studies Committee.

At the beginning of the student's master's degree program, he or she should, in consultation with his or her program advisor, select the option most suitable to his or her needs. Should a student elect to change options, he or she should consult with the program advisor.

Limitation on Repeating Courses for Credit

Many independent study, thesis, special problems, special topics, directed research, seminar, dissertation, and other similar courses may be repeated for credit; however, limitations exist on the number of semester credit hours that may be applied toward a degree. Refer to the individual course descriptions for specific details on these limitations and consult the appropriate graduate advisor.

Catalog of Graduation

Graduate students have six years from the semester of original registration to complete a graduate degree program under the catalog in effect at the time of initial registration at UTSA, provided they are continuously enrolled at UTSA. If a student drops out for one or more long (spring or fall) semesters, he or she has the option of reenrolling under a subsequent catalog. These students will have six years to complete degree requirements under the new catalog. In the event that certain required courses are discontinued, substitutions may be authorized or required by the appropriate graduate studies committee.

Additional Master's Degrees

A student who holds a master's or higher degree may pursue an additional master's degree at UTSA only under the following conditions:

1. the additional master's degree opens up an additional area, field, or concentration
2. the proposed second master's degree is approved by the appropriate graduate studies committee and the Dean of Graduate Studies.

It should be further understood that

1. the same courses cannot be applied toward two different degrees.
2. credit applied to a previous degree at another institution which duplicates a portion of the program required under the second degree being sought at UTSA does not reduce the number of semester credit hours required for that second degree. (The only exception is the M.F.A. degree. See Courses Counted for Another Degree under Course Types and Acceptability in the Transfer of Credit section of this chapter.) Courses already taken would not be required. Rather, additional coursework would be substituted for previously completed courses.

TRANSFER OF CREDIT

Limitations

Quantity

Ordinarily all work for the master's degree must be done at UTSA. Transfer credit of usually not more than 6 semester credit hours may be allowed for *graduate* coursework completed at another accredited institution upon the approval of the appropriate graduate studies committee in which the major area is located. Upon petition by the student, recommendation of the appropriate graduate studies committee, and approval by the Dean of Graduate Studies, a maximum of one-third of the semester credit hours of coursework (exclusive of thesis) required for a degree at UTSA may be accepted as transfer credit for the degree.

Time Limitation

All credit applied to a master's degree must be earned within the six years immediately preceding the date the degree is awarded. Outdated UTSA credits may be accepted upon approval of the appropriate graduate studies committee and the Dean of Graduate Studies. An examination may be required as a condition for validating this credit.

Evaluation of Courses

The Office of Admissions and Registrar evaluates transcripts and designates which graduate courses are acceptable under the above provisions for transfer toward a master's degree at UTSA. Whether or not a course is transferable as graduate coursework is determined by the course number assigned by the institution awarding the credit. To be transferable to UTSA, courses must be defined as graduate courses at the institution where credit was earned. Courses that are defined as undergraduate upper-division by their course numbers, but that can be applied to a graduate degree at the institution awarding the credit, are not accepted for transfer toward a master's degree at UTSA.

All work submitted for transfer credit must have been completed with grades of "A" or "B" and must have been completed no more than six years before the degree was awarded.

Transfers within The University of Texas System

It is the policy of The University of Texas System that all academic institutions within the System may accept graduate credit from each other, and the regular requirements for residency are adjusted accordingly. The applicability of specific courses from other University of Texas institutions to a student's graduate degree program at UTSA, however, must be approved by the appropriate graduate studies committee.

Course Types and Acceptability

Accepted on a Limited Basis

UTSA Undergraduate Courses. With the approval of the appropriate graduate studies committee, the division director, and the dean of the college in which the student expects to earn his or her degree, a candidate for the master's degree may apply a maximum of 6 semester hours of unduplicated credit for undergraduate upper-division (junior or senior) courses completed at UTSA with the grades of "A" or "B" to a master's degree; no course below the upper-division level or with other grades may be applied to the degree.

Not Accepted

Correspondence and Extension Courses. Courses completed by correspondence or extension may not be applied to a graduate degree program.

Courses Counted for Another Degree. No courses counted toward another degree may be applied to a graduate degree, either directly or by substitution. The only exception is that candidates holding a Master of Arts degree in Art from another institution seeking admission to the Master of Fine Arts degree program may have up to 24 semester credit hours applied toward the M.F.A. degree *exclusive of the thesis and/or degree project*, upon recommendation of the division graduate studies committee and approval of the Dean of Graduate Studies. Work done for the master's degree may be included in the work for the doctoral degree, when it is offered, provided it is acceptable to the candidate's supervising committee, the appropriate graduate studies committee, and the Dean of Graduate Studies.

Credit by Examination. Credit by examination at UTSA is intended to enable undergraduate students to receive credit for courses leading to a bachelor's degree in which they may already have achieved the objectives. Credit cannot be earned by CEEB examination or by UT Challenge Examination for any courses used to meet minimum requirements for a graduate degree or graduate teacher certification program. Graduate degree-seeking students in the College of Business may challenge by examination any UTSA graduate-level "professional" or "background" course that is required *in addition to minimum degree requirements*. (See the UTSA Credit by Examination brochure.)

GRADUATION

Graduation Dates

Degrees are conferred at the end of each semester. Formal public ceremonies are held at the conclusion of the Fall and Spring Semesters. Students who have graduated the previous summer may participate in commencement ceremonies at the close of the Fall Semester. Information on the procedures to be followed is available in the Office of Admissions and Registrar.

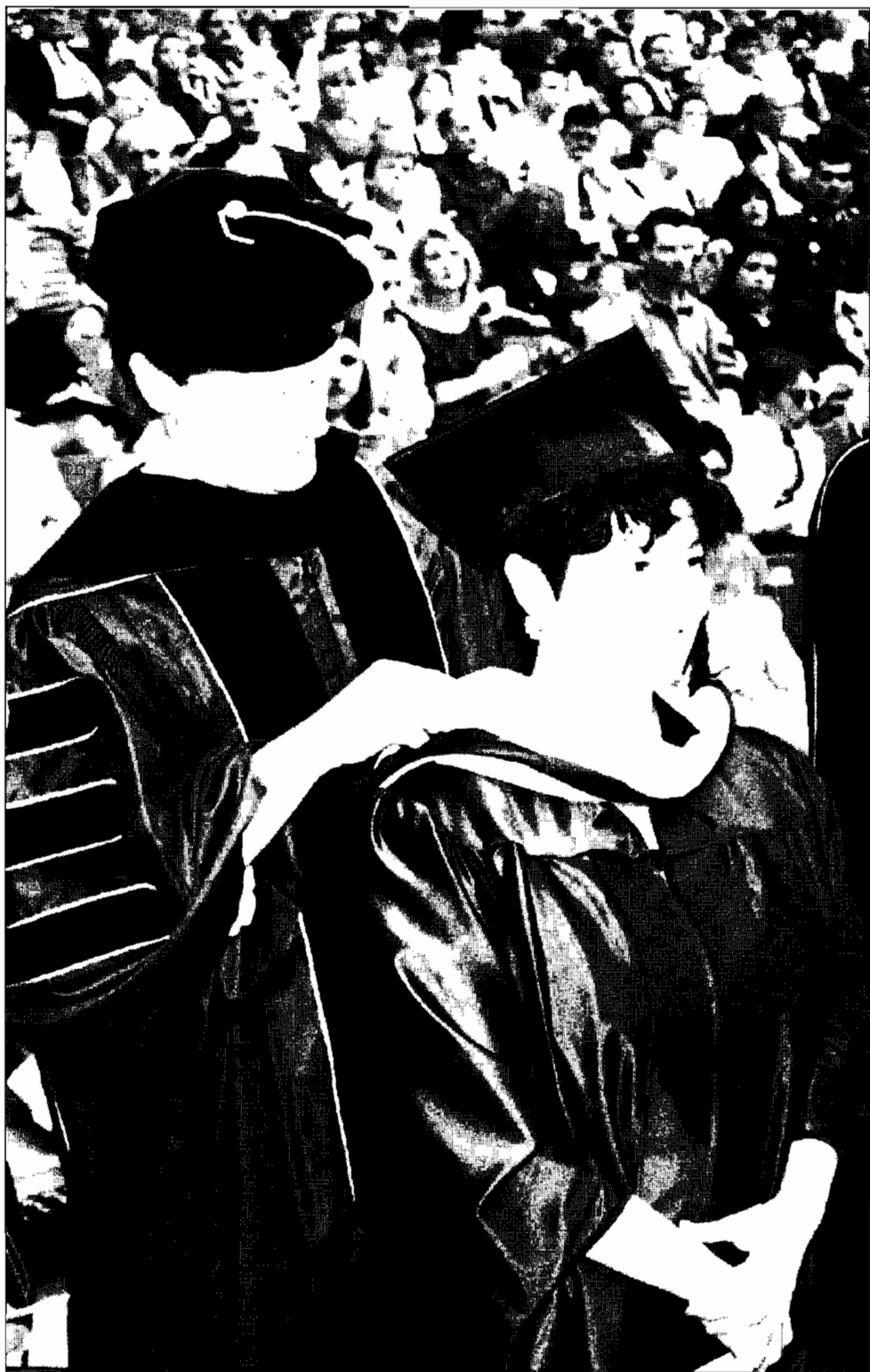
Students may not participate in ceremonies before their actual date of graduation.

Application for the Degree

It is the student's responsibility to apply officially for his or her degree at the Office of Admissions and Registrar no later than October 1 for the Fall Semester, February 1 for the Spring Semester, or June 15 for the Summer Semester. The application of any student applying for graduation after the established deadlines for that semester will be processed for graduation for the following semester. A student who has completed all degree requirements but has failed to apply for the degree may obtain a Letter of Completion from the Office of Admissions and Registrar after the close of the semester in which all degree requirements were met.

Students who apply for the degree in a given semester but who do not fulfill all requirements must file a new degree application (on or before the appropriate deadlines) for the next semester in which they intend to graduate. An additional application fee is required for the second and all subsequent degree applications.

7.
DOCTORAL DEGREE
REGULATIONS



DOCTORAL DEGREE REGULATIONS

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DEGREE REQUIREMENTS

Residence Requirement

A student must spend at least two consecutive semesters (Fall and Spring, Summer Terms I and II and Fall, or Spring and Summer Terms I and II) in residence as a full-time student taking a minimum of 9 semester credit hours each residence semester.

Grade-Point Average

A grade-point average of "B" (3.0 on a 4.0 scale) must be maintained in each of the following:

1. all coursework completed at UTSA
2. graduate courses in the student's major
3. graduate courses in the student's support field.

In computing grade-point averages, grades from other institutions are not used.

Course Requirements

No specific number of semester credit hours of coursework has been established for doctoral programs at UTSA, although advanced coursework is an essential part of a doctoral candidate's preparation. Individual doctoral programs may set minimum semester-credit-hour requirements for the attainment of the degree.

Support Work

In addition to courses and research in a field of specialization within the major, supporting coursework will be taken to broaden or supplement the student's preparation.

Support work may consist of coursework in one area or several; it may be in conference, laboratory, or problems courses; it may be a supervised activity off campus relevant to the major interest. Some portion, not necessarily all, of the support work is normally outside the major area unless that area is of a multidisciplinary nature. At least three courses or the equivalent from outside the area of specialization are generally required.

Language Proficiency

Students are required to possess a competent command of English. Proficiency in a foreign language is a matter of degree option. Students should refer to individual degree descriptions for English and foreign language proficiency requirements.

TRANSFER OF CREDIT

Students are expected to complete all coursework at UTSA. Exceptions require approval of the appropriate graduate studies committee and the Office of Graduate Studies, the administrative office responsible for graduate education.

Limited Acceptability

UTSA Undergraduate Courses

Credit earned in undergraduate-level courses may not normally be applied to a doctoral degree program. Such courses may be taken to meet background or support requirements, if necessary.

Not Accepted

Correspondence and Extension Courses

Courses completed by correspondence or extension may not be applied to a doctoral degree program.

ADMISSION TO CANDIDACY

Students seeking a doctoral degree at UTSA must be admitted to candidacy. In order to be admitted to candidacy, the student must comply with the following requirements:

1. fulfill the requirements for unconditional admission as a graduate degree-seeking student, which entails the removal of any conditions assigned at the time of admission
2. satisfy any special admission requirements established for the degree program
3. be in good standing
4. have passed a qualifying examination (written, oral, or both) prepared by the Graduate Studies Committee for the major program and have met any other requirements specified by the Graduate Studies Committee for the program
5. submit a proposed program of study
6. having satisfied the above requirements, be recommended for admission to candidacy by the appropriate graduate studies committee, which in the case of interdisciplinary programs is a committee appointed by the Office of Graduate Studies, consisting of no fewer than five members of the graduate faculty, with at least one representative from each of the disciplines included in the program
7. having satisfied the above requirements, be approved for admission to candidacy by the Office of the Provost and Vice President for Academic Affairs.

INTERIM MASTER'S DEGREE

Students who are admitted to doctoral programs directly from the bachelor's-degree level (without the requirement of a master's degree) and who want to take the master's degree as part of the program for the doctorate must meet the following requirements:

1. Complete the appropriate set of 36 semester credit hours of coursework, matching, to the satisfaction of the appropriate graduate studies committee, the 36 hours required for regular master's degrees at UTSA in the specified area.
2. Pass a qualifying examination related to the above 36-semester-credit-hour program, administered under the standard UTSA regulations. (If the doctoral

Qualifying Examination has been administered and passed, this requirement has been met.)

3. Apply for award of the master's degree at the time and in the manner prescribed for regular master's degrees at UTSA.
4. Present to the Office of Graduate Studies, through the Office of the Dean of the appropriate college
 - a. an approved program of study for the master's degree
 - b. certification of having passed the Qualifying Examination
 - c. a transcript (or certification from the Office of Admissions and Registrar) showing a GPA of 3.0 or better and current good standing
 - d. certification of removal of any conditions imposed on admission.

Courses counted as indicated above toward the master's degree may also be included in the overall requirements for the doctorate.

COMPLETING THE DEGREE

Program of Study

Before admission to candidacy, the student's proposed program of study is under the direction of the Graduate Studies Committee in the major program area through an appropriate program advisor, if designated, and the Graduate Advisor of Record. Upon admission to candidacy and the formation of the student's dissertation committee, the program of study comes under the purview of the Dissertation Committee, which reviews the proposed program of study and recommends to the Graduate Studies Committee any additional course requirements. The final program of study, as approved by the Graduate Studies Committee, is then recommended to the Office of Graduate Studies for approval. Approval of the final program of study by the Office of Graduate Studies is a degree requirement. All completed coursework included in the final program of study must have been taken within the preceding eight years. No course for which a grade of less than "C" was earned can be applied to the doctoral degree.

Qualifying Examination

All students seeking a doctoral degree must pass a qualifying examination. The Qualifying Examination for the doctoral degree is taken upon completion of coursework in the final approved program of study. This examination consists of questions to test the candidate's knowledge and command of the major field. An examination covering support work is not a University-wide requirement, but it may be required at the discretion of the Graduate Studies Committee or the Dissertation Committee.

Registration during Examination Semester(s)

Students must be registered during any semester or term in which they are taking required examinations.

Dissertation Committee

Upon admission to candidacy and in consultation with the Graduate Advisor of Record, the student selects his or her supervising professor with that professor's consent. The supervising professor, who chairs the Dissertation Committee, must be a member of the UTSA graduate faculty. Additional members of the Dissertation Committee are recommended by the supervising professor, in consultation with the student, to the Graduate Studies Committee. Upon recommendation of the Graduate Studies Committee, the Office of Graduate Studies appoints the Dissertation Committee. The committee must consist of at least four members, including the supervising professor, who consults with other members of the committee as work proceeds.

In addition to recommending the student's final program of study to the Graduate Studies Committee and supervising the research and writing of the dissertation, the Dissertation Committee certifies to the Office of Graduate Studies that all degree requirements have been fulfilled.

Progress Review

If the doctoral degree is not completed within three years from the date of passing the Qualifying Examination, the Graduate Studies Committee will review the student's progress at the end of the three-year period and annually thereafter. The committee may recommend that the student meet new requirements that have been adopted in the interim or take additional courses; it may also recommend that the student's candidacy be extended one or two semesters, or that it be terminated. Recommendations of the Graduate Studies Committee are forwarded to the Office of Graduate Studies.

Doctoral Dissertation

A dissertation is required of every candidate and must be an original contribution to scholarship, based on independent investigation in the major area. It must be approved by the Dissertation Committee. Registration for the dissertation must be for a period of more than one semester. During each semester or term that a student receives advice and/or assistance from a faculty member or supervision by the Dissertation Committee or uses University resources, he or she is required to enroll in the appropriate dissertation course.

Final Oral Examination (Defense of Dissertation)

A satisfactory final oral examination is required for the approval of a dissertation. After the Dissertation Committee makes a decision, which must be unanimous, to accept a dissertation for examination, the supervising professor notifies the Office of Graduate Studies at least two weeks in advance of the date of the final oral examination.

The examination covers the dissertation and the general field of the dissertation, and other parts of the student's program as determined by the committee. All members of the Dissertation Committee must be satisfied that the student has

1. completed the work assigned by the committee
2. passed all examinations required by the program's graduate studies committee, including the final oral examination

3. completed a dissertation that is an independent investigation in the major field, and that itself constitutes a contribution to knowledge
4. submitted an abstract for publication in *Dissertation Abstracts International* that meets with the approval of the committee.

Once this is complete, the Dissertation Committee members sign the approval sheets for the doctoral dissertation and make an official recommendation to the Office of Graduate Studies that the doctoral degree be awarded. Approval must be unanimous.

Submission and Publication of Dissertation

When the student has successfully defended the dissertation, he or she must arrange for its publication, usually by microfilm reproduction of the complete dissertation. Five unbound copies, including the original of the dissertation, must be forwarded to the Office of Graduate Studies. The copies are transmitted to the library and sent to UMI for reproduction and binding. The student is required to pay \$50 publishing and \$10 (per copy) binding fees. Other forms of publication of the dissertation may be accepted to fulfill the publication requirement. A proposal for an alternative to microfilm reproduction must be approved by the Office of Graduate Studies.

Publication by microfilm does not preclude subsequent publication of the dissertation, in whole or in part, as a monograph or in a journal. Registration of copyright at the author's expense may be arranged, if desired and appropriate, by completing a form available from the Office of Graduate Studies. In order to protect patent or other rights, the student or supervising professor may request that the Office of Graduate Studies delay publication for one year. This request must be supported by a written recommendation by the student's supervising professor.

8.
GRADUATE PROGRAM
REQUIREMENTS AND
COURSE DESCRIPTIONS



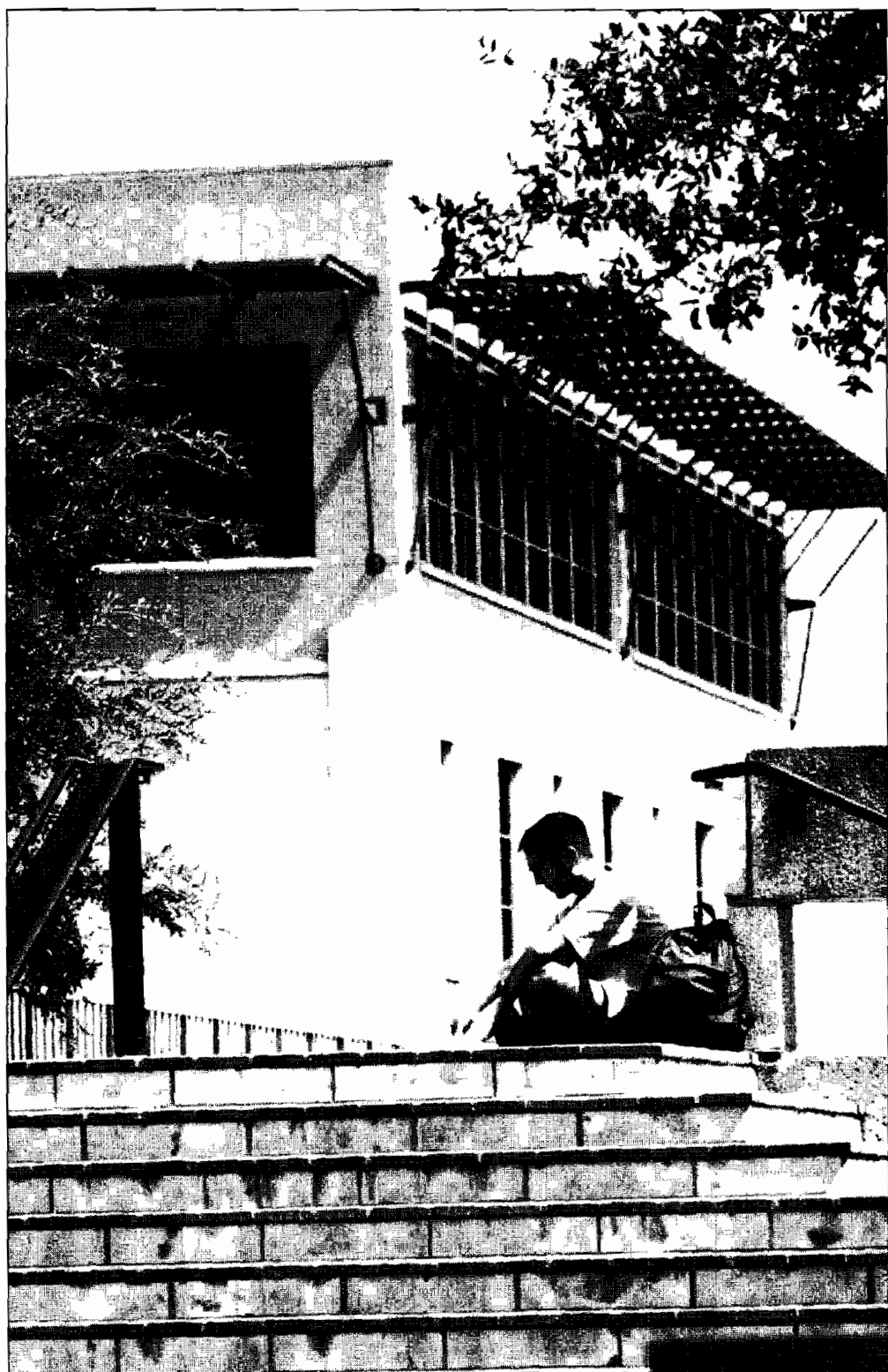
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COLLEGE OF BUSINESS



COLLEGE OF BUSINESS

Mission Statement

The mission of the College of Business is to offer graduate and undergraduate programs of high quality that meet the needs of students, both in terms of their general education and their preparation for productive and rewarding professional careers. This focus requires that the college be alert and responsive to local, regional, and national issues and to the needs of business, government, and the community at large. Its faculty approach the challenge of education not only through their classroom and advising efforts but through active scholarship in their respective disciplines and service to the University, their profession, and the community.

Master of Business Administration Degree

The Master of Business Administration degree is accredited by AACSB, the International Association for Management Education, and conforms to its recommended guidelines.

The Master of Business Administration degree is designed to offer the opportunity for intensive education to qualified graduate students and is available to individuals with undergraduate degrees in the business administration areas, as well as to those with specializations outside the business field.

Students whose previous training has been in nonbusiness fields may be admitted to the M.B.A. program but are required as a condition of admission to complete (in total or in part, depending upon the background of each student) the M.B.A. core courses. Students whose background is in business but who have completed the M.B.A. core courses seven or more years before entering the program may be required by the Admissions Subcommittee of the Graduate Studies Committee to successfully complete or test out of the M.B.A. core courses. These courses are open only to graduate students and are in addition to degree requirements of the M.B.A.

Students who enter the M.B.A. degree program should have a familiarity with computer programs commonly used for spreadsheets and word processing. Special not-for-credit courses may be offered to address this need.

Program Admission Requirements. For admission to the M.B.A. program, applicants must meet University-wide graduate admission requirements and the following College of Business requirements:

1. An approximate overall grade-point average of 3.0 in all work completed at the undergraduate level.
2. An approximate composite score of 500 with no component less than the 20th percentile on the Graduate Management Admission Test (GMAT); the results must be submitted to the Office of Graduate Studies before the applicant is considered for admission. GMAT test results will only be accepted if the test was

taken no more than five years before the date of application. Applications for the GMAT or information about the test may be obtained from GMAT, Educational Testing Service, P.O. Box 6103, Princeton, New Jersey, 08541-6103, (609) 771-7330.

Applicants are evaluated by the M.B.A. Admissions Subcommittee of the Graduate Studies Committee based on the above criteria. Those who do not meet the admissions requirements may be considered on an individual basis by this committee.

M.B.A. Core Courses. The following courses constitute the M.B.A. core and are required for students who do not have credit for equivalent undergraduate courses. However, no credit for these courses may count toward M.B.A. degree requirements.

ACC	5003	Financial Accounting Concepts
BLW	5003	Legal Environment of Business
ECO	5003	Economic Theory and Policy
FIN	5003	Business Finance
IS	5003	Introduction to Information Systems
MGT	5003	Conceptual Foundations of Management
MKT	5003	Introduction to Marketing
MS	5003	Quantitative Methods for Business Analysis

Degree Requirements. The M.B.A. program requires 33 semester credit hours of work beyond any hours acquired in the M.B.A. core courses.

Candidates for the M.B.A. degree are required to successfully complete the foundations of knowledge, which are included in the following 21 semester credit hours:

ACC	5023	Accounting Analysis for Decision Making
ECO	5023	Managerial Economics
FIN	5023	Financial Management
MGT	5043	Management and Behavior in Organizations
MGT	5903	Strategic Management and Policy*
MKT	5023	Marketing Management
MS	5023	Decision Analysis and Production Management

Students seeking the M.B.A. degree may elect one of three options to complete the required 33 semester credit hours.

Option 1: General M.B.A. Nonthesis Option. Under Option 1 students are required to complete the 21 semester credit hours above and 12 semester credit hours of electives. These electives may be taken either in the College of Business (Division of Accounting and Information Systems, Economics and Finance, or Management and Marketing) and include courses listed in the M.B.A. concentrations, or in areas outside of the college as approved by the Graduate Studies Committee.

*Students who earn a grade of "B" or better in the course will satisfy the comprehensive examination requirement. A student who receives a grade of "C" may still satisfy the requirement by successfully passing a comprehensive examination as set out in this catalog.

Option 2: General M.B.A. Thesis Option. Under Option 2 students are required to complete the 21 semester credit hours above, 6 semester credit hours of electives as approved by the Graduate Studies Committee, and 6 semester credit hours of Master's Thesis. See the University's requirements for a thesis in Options for Master's Degrees in Chapter 6.

Option 3: Nonthesis M.B.A. Concentration Option. Under Option 3 students have an opportunity to concentrate in a particular area. Areas of concentration are Business Economics, Finance, Employee Relations, Health Care Management, Information Systems, Management of Technology, Management Science, Management Accounting, Marketing Management, and Taxation.

Specific requirements for each concentration are discussed under the divisions of the College of Business.

Master of Business Administration Degree in International Business

In response to the geographical and commercial environments of UTSA, the College of Business offers the Master of Business Administration degree in International Business. This program is designed to offer students from the United States or foreign countries the opportunity to study business administration while developing special expertise in its international aspects. Specific international content courses have been developed in the disciplines of management, marketing, economics, business law, accounting, and finance. There may be opportunities to study outside the United States and to apply the credit earned to the degree program at UTSA.

Students pursuing this degree must either demonstrate proficiency in one of the modern languages or take 6 semester credit hours of culture courses approved by the graduate advisor. The proficiency in language may be demonstrated either by completion of 6 hours of courses in the same language or by an examination measuring proficiency at the 6-hour level.

Students who are not U.S. citizens and whose native language is not English will be assumed to have completed the language requirement.

Program Admission Requirements. Applicants for admission to the M.B.A. program in International Business are required to meet the same general program admission requirements set out for the M.B.A. degree.

Degree Requirements. The M.B.A. program in International Business requires 33 semester credit hours of work beyond any hours acquired in the M.B.A. core courses.

A. Candidates for the M.B.A. degree in International Business are required to successfully complete the following 18 semester credit hours:

ACC	5023	Accounting Analysis for Decision Making
ECO	5023	Managerial Economics
FIN	5023	Financial Management

MGT	5903	Strategic Management and Policy*
MKT	5023	Marketing Management
MS	5023	Decision Analysis and Production Management

B. In addition, students must complete the following 15 semester hours of courses:

Required courses (9 semester hours):

MGT	5183	Global and Comparative Management
MKT	5673	International Marketing
FIN	5833	International Financial Management

International content elective courses (6 hours from the following):

ACC	6203	Seminar in International Accounting
BLW	5173	Legal Environment of International Business
ECO	5303	International Trade and Finance
MGT	5233	International Business Analysis
MGT	5243	International Business Strategy
MGT	6973	Special International Business Topics
MKT	6973	Special International Business Topics

C. Special permission is required for

FIN	5963	International Business Internship
		or
MKT	5963	International Business Internship
FIN	5983	International Business Essay
		or
MKT	5983	International Business Essay

D. Foreign coursework. Students choose either a program of 15 semester credit hours in international content courses as listed above or a combination of elective international content courses and foreign study as approved by the Graduate Studies Committee. Normally the foreign study is taken at a cooperating foreign institution. Foreign study is encouraged, and efforts are made to assist interested students in completing a portion of their work outside the United States.

*Students who earn a grade of "B" or better in the course will satisfy the comprehensive examination requirement. A student who receives a grade of "C" may still satisfy the requirement by successfully passing a comprehensive examination as set out in this catalog.

DIVISION OF ACCOUNTING AND INFORMATION SYSTEMS

Mission Statement

The mission of the accounting programs in the Division of Accounting and Information Systems is to offer graduate and undergraduate accounting programs of high quality that prepare students for professional careers in accounting. This mission includes providing a broad-based education and education in current business and accounting topics. The division is responsive to the needs of employers and other constituents of its programs. The division is also alert to the current issues in the local, regional, and national environment and plans and implements changes in the educational process to respond to those issues when needed. Faculty assist in accomplishing this mission through a planned integration of their teaching, intellectual, and service contributions.

The Master of Science in Accounting and the Master of Taxation degrees have been separately accredited by AACSB, the International Association for Management Education.

Master of Business Administration Degree Management Accounting Concentration

This concentration is designed to provide added preparation in management accounting subjects for graduate business students who do not have extensive coursework in accounting.

Students choosing to concentrate in management accounting must complete the 21 semester credit hours of courses containing the foundations of knowledge and 12 semester credit hours as follows:

ACC	5803	Controllership
ACC	5833	Cost Management and Control
ACC	5853	Advanced Managerial Accounting Topics
ACC	5873	Budgeting and Forecasting

Master of Business Administration Degree Taxation Concentration

This concentration is designed to offer the opportunity for qualified graduate students to study business administration while developing special expertise in taxation. To achieve this end, students can focus their elective courses on developing an understanding of tax problems and opportunities in business planning.

Students choosing to concentrate in taxation must complete the 21 semester credit hours of courses containing the foundations of knowledge and 12 semester credit hours as follows:

ACC 6043 Tax Research

and 9 hours from the following:

ACC	6053	Estate, Trust, and Gift Taxation
ACC	6073	Corporate Taxation
ACC	6083	Tax Practice and Procedure
ACC	6113	Taxation of Partnerships and S Corporations
ACC	6123	Advanced Corporate Taxation
ACC	6143	Tax Planning
ACC	6163	International Taxation

Master of Science in Accounting Degree

The Master of Science in Accounting (M.S.A.) degree is designed to accommodate applicants with a degree in any field. Applicants must complete the equivalent of a B.B.A. degree in accounting from an accredited institution or must enroll in the M.S.A. core courses plus certain accounting courses set out by the Coordinator of Graduate Programs in Accounting and Taxation. M.S.A. core courses may be taken simultaneously with the M.S.A. requirements, subject to course prerequisites and approval of the Coordinator of Graduate Programs in Accounting and Taxation.

Program Admission Requirements. In addition to satisfying the University-wide graduate admission requirements for unconditional admission, an applicant seeking unconditional admission to the M.S.A. program must meet the following requirements:

1. An approximate overall grade-point average of 3.0 in all work completed at the undergraduate level.
2. An approximate composite score of 500 with no component less than the 20th percentile on the Graduate Management Admission Test (GMAT); the results must be submitted to the Office of Admissions and Registrar before the applicant is considered for admission. GMAT results will only be accepted if the test was taken no more than five years before the date of application. Applications for the GMAT or information about the test may be obtained from GMAT, Educational Testing Service, P.O. Box 6103, Princeton, New Jersey, 08541-6103, (609) 771-7330.

Applicants are evaluated by the M.S.A. Admissions Committee based on the above criteria. Those who do not meet the admission requirements may be considered for admission on a conditional basis. Admission deficiencies, which do not count toward degree requirements, must be removed before enrolling for the last semester before graduation.

The following M.S.A. core courses or their equivalents are required for students with undergraduate curriculum deficiencies; however, no credit for these courses will count toward the M.S.A. degree requirements:

ACC	5003	Financial Accounting Concepts
ACC	5023	Accounting Analysis for Decision Making
ACC	3023	Intermediate Financial Accounting I

ACC	3033	Intermediate Financial Accounting II
ACC	3043	Federal Income Tax Accounting
ACC	3113	Accounting Information Systems
ACC	4013	Principles of Auditing
ACC	4153	Corporate and Partnership Taxation
BLW	5003	Legal Environment of Business
ECO	5003	Economic Theory and Policy
FIN	5003	Business Finance
IS	5003	Introduction to Information Systems
MGT	5003	Conceptual Foundations of Management
MKT	5003	Introduction to Marketing
MS	5003	Quantitative Methods for Business Analysis

Degree Requirements. The minimum number of semester credit hours required for this degree, exclusive of coursework or other study required to remove admission deficiencies, is 30 hours.

All candidates must complete the following:

A. 15 semester credit hours of required graduate courses:

ACC	5813	Advanced Auditing
ACC	5853	Advanced Managerial Accounting Topics
ACC	5863	Advanced Financial Accounting
ACC	6013	Seminar in Current Accounting Theory
ACC	6043	Tax Research

B. 6 semester credit hours of graduate electives in accounting or taxation

C. 9 semester credit hours of graduate nonaccounting electives, approved by the Coordinator of Graduate Programs in Accounting and Taxation

Master of Taxation Degree

The Master of Taxation (M.T.) degree is designed to accommodate applicants with a degree in any field. Applicants must complete the equivalent of a B.B.A. degree in accounting from an accredited institution or enroll in M.T. core courses. M.T. core courses may be taken simultaneously with the M.T. requirements, subject to course prerequisites.

Program Admission Requirements. In addition to satisfying the University-wide graduate admission requirements for unconditional admission, an applicant seeking unconditional admission to the M.T. program must meet the following requirements:

1. An approximate overall grade-point average of 3.0 in all work completed at the undergraduate level.
2. An approximate composite score of 500 with no component less than the 20th percentile on the Graduate Management Admission Test (GMAT); results must be submitted to the Office of Admissions and Registrar before the applicant is considered for admission. Results will only be accepted if the test was taken no more than five years before the date of application. Applications for the GMAT

or information about the test may be obtained from GMAT, Educational Testing Service, P.O. Box 6103, Princeton, New Jersey, 08541-6103, (609) 771-7330.

Applicants are evaluated by the M.T. Admissions Committee based on the above criteria. Those who do not meet the admission requirements may be considered for admission on a conditional basis. Admission deficiencies, which do not count toward degree requirements, must be removed before enrolling for the last semester before graduation.

The following M.T. core courses or their equivalents are required for students with undergraduate curriculum deficiencies; however, no credit for these courses will count toward the M.T. degree requirements:

ACC	5003	Financial Accounting Concepts
ACC	5023	Accounting Analysis for Decision Making
ACC	3023	Intermediate Financial Accounting I
ACC	3033	Intermediate Financial Accounting II
ACC	3043	Federal Income Tax Accounting
ACC	3113	Accounting Information Systems
ACC	4013	Principles of Auditing
ACC	4153	Corporate and Partnership Taxation
BLW	5003	Legal Environment of Business
ECO	5003	Economic Theory and Policy
FIN	5003	Business Finance
IS	5003	Introduction to Information Systems
MGT	5003	Conceptual Foundations of Management
MKT	5003	Introduction to Marketing
MS	5003	Quantitative Methods for Business Analysis

Degree Requirements. All candidates must complete the following:

A. 15 semester credit hours of required graduate tax courses:

ACC	6043	Tax Research
ACC	6053	Estate, Trust, and Gift Taxation
ACC	6073	Corporate Taxation
ACC	6083	Tax Practice and Procedure
ACC	6113	Taxation of Partnerships and S Corporations

B. 6 semester credit hours of graduate tax electives

C. 6 semester credit hours of graduate tax or accounting electives

D. 3 semester credit hours of graduate business electives outside the areas of taxation and accounting, approved by the Coordinator of Graduate Programs in Accounting and Taxation

COURSE DESCRIPTIONS ACCOUNTING (ACC)

- 5003 Financial Accounting Concepts**
(3-0) 3 hours credit.
An intensive study of accounting as a tool to communicate financial information for planning, analyzing, and controlling business enterprises directed toward decision making.
- 5023 Accounting Analysis for Decision Making**
(3-0) 3 hours credit. Prerequisite: ACC 5003 or an equivalent.
The study of accounting and its uses by management in the decision-making process.
- 5403 Financial Accounting and Reporting**
(3-0) 3 hours credit.
An intensive study of current accounting theory and practice as it applies to corporate financial accounting and reporting. Application of Generally Accepted Accounting Principles (GAAP) to corporate accounting and their effect on external financial reporting are emphasized. (Credit for this course may not be counted toward the M.S.A. or M.T. degree requirements.)
- 5413 Managerial Accounting in Business Organizations**
(3-0) 3 hours credit.
An intensive study of managerial and cost accounting techniques as they apply to decision making within business organizations. The use of quantitative methods in decision making and the role of internal accounting reports in business organizations are emphasized. (Credit for this course may not be counted toward the M.S.A. or M.T. degree requirements.)
- 5423 Survey of Taxation**
(3-0) 3 hours credit. Prerequisites: ACC 5403 and 5413 or their equivalents.
A study of federal taxation of individuals, partnerships, and corporations. (Credit for this course may not be counted toward the M.S.A. or M.T. degree requirements.)
- 5433 Accounting Systems and Auditing**
(3-0) 3 hours credit. Prerequisites: ACC 5403 and 5413 or their equivalents.
A study of accounting systems as an integrating framework within business organizations. Auditing theory and practice, the role and function of internal control and audit reports are emphasized. (Credit for this course may not be counted toward the M.S.A. or M.T. degree requirements.)
- 5443 Advanced Accounting Practice**
(3-0) 3 hours credit. Prerequisites: ACC 5403 and 5413 or their equivalents.
Accounting regulation, the structure of the accounting profession, development of GAAP and accounting theory, the role of the accountant, professional ethics, and the social responsibility and obligations of professional accountants to the community are studied. (Credit for this course may not be counted toward the M.S.A. or M.T. degree requirements.)

5803 Controllership

(3-0) 3 hours credit. Prerequisite: ACC 5023 or an equivalent.

A study of the accounting executive's role in the management of a business enterprise; case studies of the use of accounting information to management. (Formerly ACC 5033. Credit cannot be earned for both ACC 5803 and ACC 5033.)

5813 Advanced Auditing

(3-0) 3 hours credit. Prerequisite: ACC 4013 or an equivalent.

A study of specialized areas of auditing. Topics may vary depending upon current professional controversies. (Formerly ACC 5043. Credit cannot be earned for both ACC 5813 and ACC 5043.)

5823 Nonprofit and Governmental Accounting

(3-0) 3 hours credit. Prerequisite: ACC 3033 or an equivalent.

A study of accounting principles and practices of not-for-profit organizations, including federal, state, and local governments. (Formerly ACC 5053. Credit cannot be earned for both ACC 5823 and ACC 5053.)

5833 Cost Management and Control

(3-0) 3 hours credit. Prerequisite: ACC 5023 or an equivalent.

Study of contemporary issues, cost concepts, and procedures in managerial accounting, to include analysis and application of techniques in the generation of data for management information systems. (Formerly ACC 5073. Credit cannot be earned for both ACC 5833 and ACC 5073.)

5843 Seminar in Internal Auditing

(3-0) 3 hours credit. Prerequisite: ACC 4013 or an equivalent.

A study of specialized areas of internal and operational auditing. Topics may vary depending upon current professional controversies. (Formerly ACC 5083. Credit cannot be earned for both ACC 5843 and ACC 5083.)

5853 Advanced Managerial Accounting Topics

(3-0) 3 hours credit. Prerequisite: ACC 5023 or an equivalent.

Advanced study of the applications of managerial accounting, including cost analysis, variance analysis, pricing decisions, transfer pricing, and budgeting. (Formerly ACC 5123. Credit cannot be earned for both ACC 5853 and ACC 5123.)

5863 Advanced Financial Accounting

(3-0) 3 hours credit. Prerequisite: ACC 3033 or an equivalent.

A study of specialized areas of financial accounting. Topics may vary depending upon current professional controversies. (Formerly ACC 5133. Credit cannot be earned for both ACC 5863 and ACC 5133.)

5873 Budgeting and Forecasting

(3-0) 3 hours credit. Prerequisite: ACC 5023 or an equivalent.

Examines the accountant's role in budgeting and forecasting. Study of advanced forecasting techniques and applications of microcomputers and forecasting. (Formerly ACC 5143. Credit cannot be earned for both ACC 5873 and ACC 5143.)

6013 Seminar in Current Accounting Theory

(3-0) 3 hours credit. Prerequisite: ACC 3033 or an equivalent.

A study of the nature of accounting and the nature of theory, and an explanation of the history of the development of Generally Accepted Accounting Principles. A critical analysis of the validity of such principles. Research into the field of current accounting literature, with the objective of critically evaluating the present status and future course of accounting thought.

6043 Tax Research

(3-0) 3 hours credit. Prerequisite: ACC 4153 or an equivalent.

An in-depth study of how to find answers to tax questions. Students will become acquainted with various tax materials in the library and their use, including tax services, case reports, and IRS publications.

6053 Estate, Trust, and Gift Taxation

(3-0) 3 hours credit. Prerequisite: ACC 4153 or an equivalent.

Emphasis on estate and gift planning and income taxation of trusts and estates. Taxation of gratuitous transfers under the federal Estate and Gift Tax Codes including inter vivos gifts, marital deduction, powers of appointment, retained interest, the concept of distributable net income, fiduciary taxation, and the concept of an estate.

6073 Corporate Taxation

(3-0) 3 hours credit. Prerequisite: ACC 4153 or an equivalent.

Study of federal income taxation of corporations and shareholders, with emphasis on formation, distributions, personal holding companies, accumulated earnings tax, capital gains and losses, net operating losses, and capital and debt structure.

6083 Tax Practice and Procedure

(3-0) 3 hours credit. Prerequisites: ACC 4153 or an equivalent.

Advanced case studies of tax audits, administrative appeals, settlement technique, appellate jurisdiction, choosing forums, ruling and technical requests, civil litigation, collection process, offers in compromise, interest and civil penalties, indirect methods of proof, and criminal penalties.

6113 Taxation of Partnerships and S Corporations

(3-0) 3 hours credit. Prerequisite: ACC 4153 or an equivalent.

A study of the special tax attributes of partnerships and Subchapter S corporations, with a comparison of these forms of doing business. Formation, operation, and dissolution of partnerships and Subchapter S corporations.

6123 Advanced Corporate Taxation

(3-0) 3 hours credit. Prerequisites: ACC 6043 and 6073, or their equivalents. Corporate liquidations, divisions, and reorganizations, and consolidated tax returns.

6143 Tax Planning

(3-0) 3 hours credit. Prerequisite: ACC 4153 or an equivalent.

A study of tax planning topics and techniques for individual taxpayers. Conducted in a seminar format, the course includes such issues as disposition of assets; the realization and recognition of gains and losses, including passive activities; and business profit-oriented expenses.

6163 International Taxation

(3-0) 3 hours credit. Prerequisite: ACC 4153 or an equivalent.

Study of tax problems and planning with respect to international transactions of individuals and corporations. Topics include U.S. taxation of foreign individual and corporate investments in the United States; U.S. taxation of export transactions, foreign investments, and U.S. persons living abroad; and analysis of applicable tax treaties.

6203 Seminar in International Accounting

(3-0) 3 hours credit. Prerequisite: 9 semester credit hours of accounting.

An analysis of the issues involved in accounting for multinational corporations, including environmental influences, foreign currency translation, management accounting, and international accounting standard setting. A brief study of accounting history is included in the course. (Formerly ACC 6133. Credit cannot be earned for both ACC 6203 and ACC 6133.)

6943 Accounting Internship

3 hours credit. Prerequisites: Graduate standing; 15 semester credit hours of upper-division accounting or an equivalent.

Internship must be approved in advance by the Internship Coordinator and the Graduate Advisor of Record. Supervised full- or part-time off-campus training in public accounting, industry, or government. Individual conferences and written reports required.

6951-3 Independent Study

1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the appropriate committee on graduate studies to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Committee on Graduate Studies. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when the topics vary, but not more than 6 hours, regardless of discipline, will apply to a master's degree.

6983 Master's Thesis

3 hours credit. Prerequisite: Permission of the Graduate Advisor of Record and thesis director (form available).

Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

Master of Business Administration Degree Information Systems Concentration

This concentration is designed to offer the opportunity for qualified graduate students to study business administration while developing special expertise in information systems. To achieve this end, students can focus their elective courses on developing general managerial knowledge in the design and implementation of information systems, management of communication technologies, and principles of database management systems. Some of the course offerings require previous academic credit or professional experience in information systems.

Students choosing to concentrate in information systems must complete the 21 semester credit hours of courses containing the foundations of knowledge and 12 semester credit hours of graduate information systems courses other than IS 5003.

Master of Science Degree in Information Technology

The Master of Science degree in Information Technology provides information systems and computer science professionals with the opportunity to acquire technical knowledge in a variety of specialized information technology fields and the management skills to create, plan, organize, lead, and control the information technology in their organizations. The program is designed for students with a technical background and preferably an undergraduate or graduate degree in information systems or computer science.

Degree requirements. Candidates for the degree of Master of Science in Information Technology must complete the following:

A. 12 semester credit hours of required courses:

IS	5143	Information Technology
IS	5203	Telecommunication Systems
MGT	5043	Management and Behavior in Organizations
MOT	5203	Strategic Management of Technology

B. All candidates for the degree must complete an additional 21 semester credit hours of elective courses.

1. Five courses from the following:

CS	5103	Software Engineering
CS	5443	Database Management
CS	6543	Networks
CS	6553	Performance Evaluation
IS	5193	Software Engineering Management
IS	5563	International Telecommunications Policy
IS	6103	Information Systems Design and Implementation
IS	6203	Data Communications and Network Management
IS	6503	Principles of Database Management
IS	6703	Advanced Business Information Systems
IS	6953	Independent Study

2. Two courses from the following:

MOT	5213	Organizational Systems for Management of Technology and Innovation
MOT	5163	Management of Technology
MGT	5093	Leadership
MGT	5133	Organizational Decision Making

COURSE DESCRIPTIONS INFORMATION SYSTEMS (IS)

5003 Introduction to Information Systems

(3-0) 3 hours credit.

A conceptual study of information systems in organizations. A survey of information systems concepts will be presented, including a historical perspective of information systems, the structure of the information systems function, an introduction to information systems technologies (hardware and software), application planning, system development, end user computing, decision support systems, and the management of information systems resources. Small cases and application problems which illustrate the concepts studied will be assigned. (Credit for this course may not be counted toward the M.B.A. concentration in Information Systems.)

5013 Database Management for Business

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

The use of databases in a contemporary business environment will be discussed. The course includes an in-depth analysis of topics associated with the definition, creation, and use of databases for business-oriented applications. Topics include current applications in the field of database management systems with hands-on experience with a database or data-warehousing software package.

5103 Computer Support of Groups

(3-0) 3 hours credit. Prerequisite: IS 5003 or an equivalent.

A study of the ways computers can be used to support the communication, coordination, and decision-making needs of groups. Problems encountered by face-to-face and distributed groups will be examined. Technology for addressing the problems will be studied.

5113 Electronic Commerce

(3-0) 3 hours credit. Prerequisite: IS 5003 or an equivalent.

Addresses the technological aspects of doing business on the Internet, including the technology underlying the Internet, common services required for all electronic commerce such as authentication and electronic payment systems, and the problems associated with some electronic commerce applications.

5143 Information Technology

(3-0) 3 hours credit. Prerequisite: Undergraduate degree in information systems or computer science, or consent of instructor.

Broad coverage of technology concepts underlying modern computing and information management. Topics include computer architecture and operating systems, information retrieval techniques, graphical user interfaces, networks, groupware, computer performance evaluation, efficiency of algorithms, and cryptography. Hands-on exposure to Internet services, SQL database language, PowerBuilder graphical interface language, and Lotus Notes.

5193 Software Engineering Management

(3-0) 3 hours credit. Prerequisite: Undergraduate degree in information systems or computer science, or consent of instructor.

Focuses on managing and improving the delivery of software in organizations, especially projects that include the development of large, multidisciplinary systems. Students are exposed to the tools and techniques used on commercial systems, and they present research on how best to manage information technology projects. Emphasis on measurement tools for effective managerial planning and control.

5203 Telecommunication Systems

(3-0) 3 hours credit. Prerequisite: Undergraduate degree in information systems or computer science, or consent of instructor.

Examines current, future, and basic technical concepts and related telecommunications operations; explores critical issues of communications and connectivity among information systems from strategic, organizational, and technical perspectives. An in-depth examination of basic telecommunication terminology and concepts. Topics include signaling, modulation, multiplexing, frequency bands and propagation characteristics, spectral analysis of signals, digital coding, switching systems, OSI models, and traffic analysis.

5563 International Telecommunications Policy

(3-0) 3 hours credit. Prerequisite: Undergraduate degree in information systems or computer science, or consent of instructor.

The ultimate use of technology depends on a number of variables. Political factors as well as technical ones must be considered. All levels of government regulate telecommunications, from the city that controls the placement of telephone wires to the nation and/or state that issues licenses to broadcast. Because of the nature of telecommunications and the importance of the information it carries, international policies are also involved. This seminar investigates the institutions that affect the use of telecommunications, including the Department of State, the Department of Commerce and the FCC.

6103 Information Systems Design and Implementation

(3-0) 3 hours credit. Prerequisite: IS 4053 or consent of instructor.

Integrates the areas of computer technology, systems analysis, and systems design in designing large-scale application or decision support systems. A strong introduction to the formalization of the information systems design process is provided. The course explores state-of-the-art systems design and specification techniques and stresses the frontiers of knowledge in the specification, design, implementation, and testing of information systems.

6203 Data Communication and Network Management

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

Emphasis is on the impact of communications technology on information systems and the firm. Major topics include communication concepts, network architectures, data communications software and hardware, distributed information systems, and communication services. Network management and managing the new technologies are also emphasized.

6403 Information Resource Management

(3-0) 3 hours credit. Prerequisite: MGT 5043 or consent of instructor.

Study of the problems and techniques associated with managing information resources. Topics include information systems project planning and control, staffing, and costing alternatives. The role of the information systems function in relation to the business firm is also studied.

6503 Principles of Database Management

(3-0) 3 hours credit. Prerequisite: IS 3063 or consent of instructor.

Discussion and in-depth analysis of topics associated with the definition, creation, and management of databases for business-oriented applications. Topics include current developments in the field of database management systems. Design and implementation of a database system will be done as a major project in the course.

6603 Seminar in Computer Security and Internal Control

(3-0) 3 hours credit. Prerequisite: IS 5003 or consent of instructor.

In-depth analysis of topics related to control and security during system development and operation of information systems. Emphasis is on techniques associated with control and security requirements in information systems.

- 6703 Advanced Business Information Systems**
(3-0) 3 hours credit. Prerequisite: IS 3073 or consent of instructor.
Study of computer-based technologies for facilitating the analysis and evaluation of complex problems. A review of decision analysis and a discussion of representations and the modeling process. General concepts of artificial intelligence are examined as the foundation for designing computer-based information systems that support strategic planning and managerial control. Methods and principles of knowledge engineering are explored.
- 6951-3 Independent Study**
1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.
- 6961 Comprehensive Examination**
1 hour credit. Prerequisite: Approval of the appropriate committee on graduate studies to take the Comprehensive Examination.
Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Committee on Graduate Studies. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).
- 6973 Special Problems**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems may be repeated for credit when the topics vary, but no more than 6 hours, regardless of discipline, will apply to the master's degree.
- 6983 Master's Thesis**
3 hours credit. Prerequisite: Permission of the Graduate Advisor of Record and thesis director (form available).
Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

DIVISION OF ECONOMICS AND FINANCE

Master of Business Administration Degree Business Economics Concentration

This concentration is designed to offer the opportunity for qualified graduate students to study business administration at the graduate level with particular emphasis in business economics. It assists students in preparing for economics-related careers in the business environment and government or for graduate study in economics at the doctoral level.

Students choosing to concentrate in business economics must complete the 21 semester credit hours of courses containing the foundations of knowledge and 12 semester credit hours as follows:

ECO	5033	Economic Policy and Business Issues
ECO	6103	Economic and Business Forecasting: National and International Applications

6 semester credit hours of graduate economics elective courses

Master of Arts Degree in Economics

The Master of Arts degree in Economics blends the traditional social sciences-oriented master's program in economics with modern applied and analytical tools. It is designed to prepare students for careers in a wide range of professional fields or further graduate study in economics. Students may choose a thesis or nonthesis option. The program and admissions are supervised by the Economics Graduate Studies Committee, which includes the Economics Graduate Advisor. General requirements for completion of the program consist of required courses, electives, and a comprehensive examination.

Program Admission Requirements. Applicants must meet University-wide graduate admission requirements. They are evaluated by the Economics Graduate Studies Committee based on the following criteria:

1. Admission decisions are based on grade-point average, letters of reference, and Graduate Record Examination (GRE) or Graduate Management Admission Test (GMAT) scores.
2. Applicants must have an approximate score of 1000 on the GRE or an approximate composite score of 500 on the GMAT.
3. Accepted students are required to have completed an undergraduate degree before the start of the master's program.
4. Students with noneconomics undergraduate degrees may be required to take some undergraduate or graduate courses that do not apply toward the master's degree.

Degree Requirements. Students must complete 33 semester credit hours and a comprehensive examination.

A. Required courses. 12 semester credit hours of economics graduate courses:

ECO	5023	Managerial Economics
ECO	5033	Economic Policy and Business Issues
ECO	6103	Economic and Business Forecasting: National and International Applications
ECO	5303	International Trade and Finance
		or
ECO	6203	Government and Business

- B. 21 semester credit hours of elective graduate work, 12 of which may be noneconomics courses, contingent upon approval by the Economics Graduate Advisor. With approval of the advisor, students with graduate credits in a noneconomics field may apply up to 12 hours of graduate work to fulfill the noneconomics elective requirements.

Students pursuing the nonthesis option must complete at least 9 hours of economics elective courses. In the thesis option, students fulfill 6 hours of the elective work with a thesis. Elective courses are economics graduate courses not in the student's required courses sequence, including

ECO	5303	International Trade and Finance
ECO	5603	Public Finance and Fiscal Policy
ECO	5913	Antitrust: Legal and Economic Analysis
ECO	6203	Government and Business
ECO	6313	Managerial Labor Economics
ECO	6543	Health Care Economics and Policy
ECO	6553	Urban and Regional Economics
ECO	6973	Special Problems

- C. Comprehensive examination. Students must pass a comprehensive examination administered by their graduate committee. This exam is normally given in the semester before the semester during which degree requirements are completed. The committee consists of the Economics Graduate Advisor and two other faculty members who may be recommended by the student. One may be a noneconomics faculty member. If the thesis option is adopted, the thesis supervisor is a member of the committee.

COURSE DESCRIPTIONS ECONOMICS (ECO)

5003 Economic Theory and Policy

(3-0) 3 hours credit.

The opportunity for intensive study of micro- and macroeconomic concepts; the price system as it functions under competition, monopoly, and partial monopoly; national income measurement and determination; business cycles; money and banking; monetary policy; and fiscal policy and economic stabilization.

5023 Managerial Economics

(3-0) 3 hours credit. Prerequisites: ECO 5003 and MS 5003, or their equivalents.

Application of price theory to economic decisions of the firm. A problem-oriented approach emphasizing demand, production, and profit-maximizing conditions and their implications for output and pricing strategies under various market structures and types of organization.

5033 Economic Policy and Business Issues

(3-0) 3 hours credit. Prerequisite: ECO 5003 or an equivalent.

A study of fluctuations in overall economic activity and their impact on optimal business and government economic decisions. Contemporary issues regarding the Federal Reserve's monetary policy and the government's tax and spending policies are evaluated in static and dynamic settings in terms of implications for inflation, unemployment, the government budget deficit, and the trade deficit.

5303 International Trade and Finance

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

Survey of international trade theory and policy, balance of payments, and exchange rates, with applications to current issues.

5603 Public Finance and Fiscal Policy

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

Theoretical rationale for collective action; incidence, equity, and efficiency of taxation methods; externalities and property rights; and fiscal management and debt financing.

5913 Antitrust: Legal and Economic Analysis

(3-0) 3 hours credit. Prerequisite: ECO 5003 or an equivalent.

An analysis of promoting and protecting competition through law. Antitrust implications of the managerial process are examined.

6103 Economic and Business Forecasting: National and International Applications

(3-0) 3 hours credit. Prerequisite: ECO 5003, an equivalent, or consent of instructor.

Study of traditional and advanced forecasting techniques. Application of computer-assisted forecasting methods to national and international business forecasting problems.

6203 Government and Business

(3-0) 3 hours credit. Prerequisite: ECO 5003 or an equivalent.

Study of the role of government in the marketplace. Economic analysis of market structure and industry performance; motivations for and the effects of antitrust laws, economic regulations of private business, and public ownership of business.

- 6313 Managerial Labor Economics**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Survey of wage theory; wage determination and structure of labor markets; employment opportunities, economic security, leisure, and technological change; and labor organizations and collective bargaining.
- 6543 Health Care Economics and Policy**
(3-0) 3 hours credit. Prerequisite: ECO 5003 or an equivalent.
The application of economic principles and modeling to the health care marketplace. Students will be given the opportunity to apply theoretical and empirical economic analysis to business and public policy issues in the health care industry.
- 6553 Urban and Regional Economics**
(3-0) 3 hours credit. Prerequisite: ECO 5003, an equivalent, or consent of instructor.
Economic aspects of regions and their cities, including growth and development processes; data sources and analytical methods; and analysis of urban issues such as transportation, land use, pollution, and public sector service delivery.
- 6943 Economics Internship**
3 hours credit. Prerequisites: Graduate standing, 15 semester credit hours of graduate work, and consent of instructor. Internship must be approved in advance by the Internship Coordinator and the student's graduate advisor of record. Cannot count as an economics elective toward an M.B.A. with a concentration in Business Economics.
Supervised full- or part-time off-campus work experience and training in economics. Individual conferences and written reports required.
- 6951-3 Independent Study**
1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, will apply to a master's degree.
- 6961 Comprehensive Examination**
1 hour credit. Prerequisite: Approval of the appropriate graduate studies committee to take the Comprehensive Examination.
Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when the topics vary, but no more than 6 hours, regardless of discipline, will apply to a master's degree.

6983 Master's Thesis

3 hours credit. Prerequisite: Permission of the Graduate Advisor of Record and thesis director.

Thesis research and preparation. May be repeated for credit, but no more than 6 hours will apply to a master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

Master of Business Administration Degree Finance Concentration

This concentration is designed to offer the opportunity for qualified graduate students to study business administration at the graduate level with an emphasis in finance. It particularly assists students in preparing for finance-related careers in the business environment or for graduate study in finance at the doctoral level.

Students choosing to concentrate in finance must complete the 21 semester credit hours of courses containing the foundations of knowledge and 12 semester credit hours as follows:

FIN 5633 Investment Theory and Problems
9 semester credit hours of graduate finance elective courses

Master of Science Degree in Finance

The Master of Science degree in Finance provides an intensive education in various aspects of finance, including corporate finance, international finance, financial modeling, investments, and derivative securities. Emphasis is on theoretical aspects of finance, developments in financial instruments and markets, and practical application tools and techniques. The program is designed to train students to be financial managers and analysts in corporations, banks, and investment institutions. It also prepares students for undertaking specialized certification examinations and doctoral studies in finance. The program and admissions are supervised by the Graduate Studies Committee in Finance, which includes the Graduate Advisor in Finance. General requirements for completion of the program consist of nonfinance foundations of knowledge requirements, required finance courses, elective work, and a comprehensive examination.

Program Admission Requirements. For unconditional admission to the program, applicants must meet the University-wide graduate admission requirements and the following criteria:

1. An approximate overall grade-point average of 3.0 (on a 4.0 scale) in all work completed at the undergraduate level.
2. An approximate composite score of 500 on the Graduate Management Admission Test (GMAT). Results must be submitted to the Office of Admissions and Registrar before the applicant is considered for admission.
3. Applicants are evaluated by the Graduate Studies Committee in Finance based on the above criteria. Those who do not meet the admissions requirements may be considered on an individual basis by the committee.
4. Students with nonfinance undergraduate degrees may be required to take additional undergraduate and graduate courses for removal of deficiencies, as determined by the Graduate Studies Committee in Finance. Such courses do not apply toward the degree. Admission will be based upon the student's achieving a particular grade-point average in this coursework, to be determined by the Graduate Studies Committee in Finance.

Degree Requirements. Students must complete 33 semester credit hours and a comprehensive examination.

A. Foundations of knowledge courses:

ACC	5023	Accounting Analysis for Decision Making
ECO	5023	Managerial Economics
MS	5023	Decision Analysis and Production Management

B. Finance courses:

FIN	5023	Financial Management
FIN	5633	Investment Theory and Problems
FIN	6313	Modeling of Financial Decision Making (must be taken at least one semester before graduation)

C. 15 semester credit hours of electives, at least 12 of which must be in finance. The Graduate Advisor in Finance must approve nonfinance electives. Finance electives include

FIN	5033	Cases in Financial Management
FIN	5713	Financial Markets
FIN	5733	Banking and the Financial Services Industry
FIN	5813	Corporate Valuation
FIN	5833	International Financial Management
FIN	5913	Portfolio Theory and Efficient Capital Markets
FIN	6213	Speculative Markets and Securities
FIN	6943	Finance Internship
FIN	6953	Independent Study
FIN	6973	Special Problems

D. Comprehensive examination. All candidates must pass a comprehensive examination administered by the Graduate Studies Committee in Finance.

COURSE DESCRIPTIONS

FINANCE

(FIN)

5003 Business Finance

(3-0) 3 hours credit. Prerequisite: ACC 5003 or an equivalent.

The framework, tools, and basic concepts of financial management. Areas of inquiry include taxation, forecasting, working capital management, external financing, capital budgeting, and dividend policy.

5023 Financial Management

(3-0) 3 hours credit. Prerequisites: ECO 5003, FIN 5003, and ACC 5003, or their equivalents. Completion of or concurrent enrollment in ACC 5023 is recommended.

The study of concepts related to the financial management of the firm. Topics include asset and liability management, capital investment analysis and valuation, risk and uncertainty, sources and costs of financial alternatives, and corporate financial policy. (Credit cannot be earned for both FIN 5023 and FIN 5043.)

5033 Cases in Financial Management

(3-0) 3 hours credit. Prerequisite: FIN 5023 or an equivalent.

A case approach will be used to illustrate the applications of financial management to business situations and to integrate topical areas. Primary areas of focus include planning, current asset management, capital budgeting, mergers and acquisitions, and financing alternatives.

5043 Budgeting and Finance in the Public Sector

(3-0) 3 hours credit.

An examination of public finance and budgeting. Concepts of public goods, analysis of public expenditures, concepts of capital budgeting, public budgeting techniques, assessment of taxation structures and other revenue sources, and intergovernmental fiscal relations. (Credit cannot be earned for both FIN 5023 and FIN 5043.)

5633 Investment Theory and Problems

(3-0) 3 hours credit. Prerequisite: FIN 5023 or an equivalent.

A study of investment analysis and decision making with regard to financial instruments traded in organized markets. Topics include descriptions and functions of markets; impact of market structure on market efficiency and security pricing; valuation of stocks, bonds, and options; analysis of risk and return characteristics of investment alternatives; and selection and management of bond and stock portfolios.

5713 Financial Markets

(3-0) 3 hours credit. Prerequisite: FIN 5023 or an equivalent.

An examination of major financial markets with emphasis on current trends and developments. Topics include markets used for risk management, such as financial futures, listed options, and SWAPS.

- 5733 Banking and the Financial Services Industry**
(3-0) 3 hours credit. Prerequisite: FIN 5023 or an equivalent.
The study of management practices applicable to banks and other firms operating in the financial services industry. Bank management practices using an asset/liability management approach are emphasized. Topics include major trends and developments having an impact on the financial services industry.
- 5813 Corporate Valuation**
(3-0) 3 hours credit. Prerequisite: FIN 5023 or an equivalent.
The techniques and issues involved in making long-term capital investment decisions. Topics include the concepts of the cost of capital and financial structure and how they relate to the capital budgeting decision, dividend policy, risk assessment and management, forecasting, and cash flow analysis.
- 5833 International Financial Management**
(3-0) 3 hours credit. Prerequisite: FIN 5023 or an equivalent.
The theory of business finance as applied to the operations of multinational firms. The determinants of exchange rates and the management of exchange rate risk are analyzed in terms of their impact on how a multinational corporation functions in the international setting. Topics include the financial analysis and control of foreign investment decisions, management of working capital, participation in the international capital markets, financing of international trade, and management of corporate risk.
- 5913 Portfolio Theory and Efficient Capital Markets**
(3-0) 3 hours credit. Prerequisite: FIN 5633 or an equivalent.
A comprehensive survey of the classical and contemporary theories of optimum portfolio construction; a study of the determinants of risk-return trade-offs in the selection of securities; and emphasis on the theory and evidence of efficient markets and its implications on the analysis of securities and portfolio management.
- 5963 International Business Internship**
3 hours credit. Prerequisites: Consent of instructor and the Graduate Advisor of Record.
Opportunity for work experience in international business or a public agency.
- 5983 International Business Essay**
3 hours credit. Prerequisites: Consent of instructor and the Graduate Advisor of Record.
Original research report on an international management topic.
- 6213 Speculative Markets and Securities**
(3-0) 3 hours credit. Prerequisite: FIN 5633 or an equivalent.
An examination of derivative financial instruments such as options and futures and their potential role in controlling portfolio risk. Valuation and the risk and return characteristics of these instruments, as well as trading and portfolio strategies, will be developed.

- 6313 Modeling of Financial Decision Making**
 (3-0) 3 hours credit. Prerequisite: FIN 5023 or an equivalent.
 Computer models of financial problems commonly used in industry are developed. Topics include financial statement analysis, financial planning and forecasting, capital investment analysis, and financing decisions. Applications to investment analysis include security and options valuations, performance analysis, and portfolio management. Decision making under uncertainty is examined through various techniques, including simulation.
- 6943 Finance Internship**
 3 hours credit. Prerequisites: Graduate standing, 15 semester credit hours of graduate work, and consent of instructor. Internship must be approved in advance by the Internship Coordinator and the student's graduate advisor of record. Cannot count as a finance elective toward a M.B.A. with a concentration in Finance.
 Supervised full- or part-time off-campus work experience and training in finance. Individual conferences and written reports required.
- 6951-3 Independent Study**
 1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, will apply to a master's degree.
- 6961 Comprehensive Examination**
 1 hour credit. Prerequisite: Approval of the appropriate graduate studies committee to take the Comprehensive Examination.
 Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).
- 6973 Special Problems**
 (3-0) 3 hours credit. Prerequisite: Consent of instructor.
 An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when the topics vary, but no more than 6 hours, regardless of discipline, will apply to a master's degree.

6983 Master's Thesis

3 hours credit. Prerequisite: Permission of the Graduate Advisor of Record and thesis director.

Thesis research and preparation. May be repeated for credit, but no more than 6 hours will apply to a master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

**COURSE DESCRIPTIONS
BUSINESS LAW
(BLW)**

5003 Legal Environment of Business

(3-0) 3 hours credit.

A legal analysis of the ethical and legal environment of business. Includes topics such as the common law, court systems, business torts and crimes, contracts and related areas of the Uniform Commercial Code, agency formation, forms of business organizations, administrative law, employment law, and real and personal property law.

5033 Commercial Law

(3-0) 3 hours credit.

Thorough study of the Uniform Commercial Code and related business transactions, including Bankruptcy and Federal Securities Regulations.

5173 Legal Environment of International Business

(3-0) 3 hours credit. Prerequisite: BLW 5003 or consent of instructor.

Survey of the legal environment of international business and the laws of international commerce. Includes comparative law, treaties and international agreements and contracts, international organizations, the Foreign Corrupt Practice Act, international letters of credit, exports and imports, tariffs, antidumping, the GATT, NAFTA, European Union, foreign investments, international patent laws, and related international legal topics.

6553 Legal, Ethical, and Social Issues of Health Care Management

(3-0) 3 hours credit. Prerequisite: BLW 5003, an equivalent, or consent of instructor.

Introduction to problems, issues, and trends in organized health care delivery with a particular focus on related legal and ethical issues.

6943 Business Law Internship

3 hours credit. Prerequisites: Graduate standing, 15 semester credit hours of graduate work, and consent of instructor. Internship must be approved in advance by the Internship Coordinator and the student's graduate advisor of record.

Supervised full- or part-time off-campus work experience and training in business law. Individual conferences and written reports required.

6951-3 Independent Study

1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, will apply to a master's degree.

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when the topics vary, but no more than 6 hours, regardless of discipline, will apply to a master's degree.

DIVISION OF MANAGEMENT AND MARKETING

Master of Business Administration Degree Employee Relations Concentration

This concentration is designed to offer the opportunity for qualified graduate students to study business administration while developing expertise in employee relations management. To achieve this end, students can focus their elective courses on developing managerial skills applicable to the management of employees in organizations in a field that is continually changing due to technology, internationalization, and the social and legislative environment.

Students concentrating in employee relations must complete the 21 semester hours of foundations of knowledge and 12 semester hours as follows:

A. Required courses (6 hours):

MGT	5623	Employee Relations/Negotiations
MGT	5643	Management of Personnel and Human Resources

B. Elective courses (6 hours from the following):

MGT	5723	Labor Relations in the Public Sector
MGT	5733	Employment Law and Legislation
MGT	5813	Strategic Human Resources Management
MGT	6943	Management Internship
MGT	6973	Special Problems

Students may petition the faculty coordinating this concentration to substitute one other College of Business elective for one of the above courses

Master of Business Administration Degree Health Care Management Concentration

This concentration is designed to offer the opportunity for qualified graduate students to study business administration at the graduate level with particular emphasis in health care management. It will assist students who enter with differing work experience in their quest for managerial roles within a variety of types of health care organizations.

Students choosing to concentrate in health care management must complete the 21 semester credit hours of foundations of knowledge courses. A special section of MGT 5903 Strategic Management and Policy, focusing on strategic health care management, is required for students choosing the concentration.

In addition, students choosing this concentration must complete 12 semester hours as follows:

MGT	6123	Health Care Management
MGT	6133	Organizational and Managerial Issues in Health Care Delivery

ECO	6543	Health Care Economics and Policy
BLW	6553	Legal, Ethical, and Social Issues of Health Care Management

COURSE DESCRIPTIONS MANAGEMENT (MGT)

5003 Conceptual Foundations of Management

(3-0) 3 hours credit.

This course examines the evolution and development of conceptual frameworks for understanding managerial work and organizational processes within the context of changing environments. An integrated strategic management perspective is emphasized.

5043 Management and Behavior in Organizations

(3-0) 3 hours credit. Prerequisite: MGT 5003 or an equivalent.

This course examines the processes and techniques used to get work done through others in an organization. These processes include a study of individual differences, motivation, leadership, group behavior, interpersonal communication, decision making, and change. Cross-cultural applications are considered.

5053 Organizational Communication

(3-0) 3 hours credit. Prerequisite: MGT 5043.

A survey of theoretical and functional aspects of organizational communication, stressing interpersonal, intra- and interorganizational, and intercultural communication.

5073 Interpersonal Communication in Organizations

(3-0) 3 hours credit. Prerequisite: MGT 5043.

Focus is on problems resulting from status differentiation in superior, subordinate, and peer relationships. Topics include negative feedback, information distortion, interviewing, transactional analysis, and interpersonal perception.

5093 Leadership

(3-0) 3 hours credit. Prerequisite: MGT 5043 or consent of instructor.

An advanced course in organizational behavior that examines traditional and contemporary perspectives on leadership and the group process toward which leadership is directed. The course includes applications of leadership theory to contemporary organizational problems.

5133 Organizational Decision Making

(3-0) 3 hours credit. Prerequisite: MGT 5043 or consent of instructor.

An advanced course in organizational behavior focusing on the behavioral elements of the decision-making process. Drawing on theory and research in several disciplines, the course examines individual, group, and organizational decision-making models. Emphasis on prescriptive models for effective decision making.

5153 Social Issues in Business

(3-0) 3 hours credit. Prerequisite: MGT 5043.

Focuses on the forces surrounding the secularly oriented, technologically energized, and scientifically administered business sector of Western society. Develops an understanding of the underlying and basic forces that have fostered and shaped business. Emergence of the social responsibility ethic is examined.

5183 Global and Comparative Management

(3-0) 3 hours credit. Prerequisite: MGT 5003 or consent of instructor.

Examination of management challenges facing multinational and international business. Includes the study of organization options, political risk and strategy, staffing, communication, multicultural negotiations, and cross-cultural behavior and management. Emphasis on different countries' approaches to competing, notably East Asia, Mexico, and Europe.

5233 International Business Analysis

(3-0) 3 hours credit. Prerequisite: MGT 5003 or an equivalent, or consent of instructor.

The opportunity to develop strategic opportunities in international business through the analysis of international trade and other international statistics. Extensive use of the Internet and international databases to find, evaluate, analyze, and develop international business opportunities. Emphasis is on developing export and import trade and transportation opportunities.

5243 International Business Strategy

(3-0) 3 hours credit. Prerequisite: MGT 5003 or an equivalent, or consent of instructor.

Emphasis on how firms create global bases of sustainable competitive advantage. Examines strategic problems unique to global business competition, including dimensions of perceived environment uncertainty, international entry-mode choices, global sourcing, and creating entry barriers to defendable product markets.

5333 Small Business Development and Operation

(3-0) 3 hours credit. Prerequisite: MGT 5043 or consent of instructor.

Includes the development of new business organizations, joint ventures, mergers and acquisitions, and new products and services. Conceptualization of the managerial role in emerging enterprises.

5623 Employee Relations/Negotiations

(3-0) 3 hours credit. Prerequisite: MGT 5003 or consent of instructor.

An analysis of various employee relations systems in organizations. Emphasis on various formal and informal discipline, grievance, and appeal systems in private and public organizations, as well as group and individual negotiation and dispute resolution processes.

5643 Management of Personnel and Human Resources

(3-0) 3 hours credit. Prerequisite: MGT 5043 or consent of instructor.

Management's approach to and the techniques for handling the human resources in an organization. An examination of the primary management

activities involved in the procurement, development, utilization, and maintenance of its human resources. Course focuses on behavioral and social science findings as they relate to the policy and practice of managing the employment relationship.

5723 Labor Relations in the Public Sector

(3-0) 3 hours credit. Prerequisite: MGT 5043 or consent of instructor.

An analysis of the unique role of labor relations at the federal, state, and local levels. Consideration is given to relevant legislation and how and why public employees organize for collective bargaining. Emphasis is on the practical aspects of bargaining and contract administration and how they relate to the public in general.

5733 Employment Law and Legislation

(3-0) 3 hours credit. Prerequisite: MGT 5043 or consent of instructor.

An analysis of the various laws and administrative rulings having an impact on the employment process of organizations. Focus is on the law as it affects various administrative decisions in recruiting, selection, training, promoting, and other employment areas, including benefits and labor relations.

5803 Contemporary Issues in Management

(3-0) 3 hours credit. Prerequisite: MGT 5043 or consent of instructor.

An examination of current events or emerging topics that have an impact on managerial and organizational performance in today's dynamic environment. May be repeated for credit when topics vary.

5813 Strategic Human Resources Management

(3-0) 3 hours credit. Prerequisites: MGT 5643 or consent of instructor.

An examination of the overall role and functions of human resource management in relation to an organization's strategic planning process. Emphasis is on human resource issues of strategic importance to an organization's top management. Course focuses on the broader issues of human resource management policy, practice, and trends.

5903 Strategic Management and Policy

(3-0) 3 hours credit. Prerequisite: Completion of the foundations of knowledge courses or consent of instructor.

A course intended to integrate material taken in the M.B.A. program, as well as to broaden the horizons of the student beyond the focus on the firm. The macroeconomic aspects of the economy and contemporary problems and trends of business are covered. Students who earn a grade of "B" or better in this course will satisfy the comprehensive examination requirement. A student who receives a grade of "C" may still satisfy this requirement by successfully passing a comprehensive examination as set out in this catalog.

6123 Health Care Management

(3-0) 3 hours credit. Prerequisite: MGT 5003 or an equivalent.

Introduction to the health care industry, health care management and policy issues, managing in a regulated industry, and health care research issues. Students will have the opportunity to analyze several aspects of the health care industry using organizational and managerial frameworks.

- 6133 Organizational and Managerial Issues in Health Care Delivery**
 (3-0) 3 hours credit. Prerequisite: MGT 5003 or an equivalent.
 An analysis of the organizational and managerial implications of clinical issues in the delivery of health care. Students have the opportunity to examine quality of care issues and concerns related to patient care that affect how health care organizations are managed.
- 6943 Management Internship**
 3 hours credit. Prerequisites: Graduate standing, 15 semester credit hours of graduate work, and consent of instructor. Internship must be approved in advance by the Internship Coordinator and the student's graduate advisor of record.
 Supervised full- or part-time off-campus work experience and training in management. Individual conferences and written reports required.
- 6951-3 Independent Study**
 (1-3) 1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record.
 Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, will apply to the master's degree.
- 6961 Comprehensive Examination**
 1 hour credit. Prerequisite: Approval of the appropriate graduate studies committee to take the Comprehensive Examination.
 Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).
- 6973 Special Problems**
 (3-0) 3 hours credit. Prerequisite: Consent of instructor.
 An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when topics vary, but no more than 6 hours, regardless of discipline, will apply to a master's degree.
- 6983 Master's Thesis**
 (3-0) 3 hours credit. Prerequisite: Permission of the graduate advisor and thesis director.
 Thesis research and preparation. May be repeated for credit, but no more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

Master of Business Administration Degree Marketing Management Concentration

This concentration is designed to offer qualified graduate students the opportunity to study business administration while developing special expertise in marketing management. To achieve these ends, students may focus their elective courses in the area of marketing.

Students choosing to concentrate in marketing management must complete the 21 semester credit hours of courses containing the foundations of knowledge and 12 hours, selected from the following:

MKT	5043	Consumer Behavior in Marketing Strategy
MKT	5063	Marketing Research Design and Application
MKT	5073	Services Marketing
MKT	5083	Advertising and Promotion Management
MKT	5123	Sales Management
MKT	5673	International Marketing
MKT	6973	Special Problems
MOT	5053	Marketing Innovations

COURSE DESCRIPTIONS MARKETING (MKT)

5003 Introduction to Marketing

(3-0) 3 hours credit.

Examination of marketing in society and the firm. Functions, institutions, processes, methods, and issues will be examined. Emphasis is on marketing decision making.

5023 Marketing Management

(3-0) 3 hours credit. Prerequisites: ACC 5003, ECO 5003, FIN 5003, and MKT 5003, or their equivalents. Completion of or concurrent enrollment in ACC 5023 is recommended.

An analysis of marketing management processes within organizations. Focus is on the use of strategic planning and market analysis to design marketing programs in competitive environments.

5043 Consumer Behavior in Marketing Strategy

(3-0) 3 hours credit. Prerequisite: MKT 5023 or an equivalent.

The study of consumer behavior as the basis for marketing opportunities. Analyzes and evaluates contemporary models of consumer behavior as a guide to organizational decision making.

- 5063 Marketing Research Design and Application**
(3-0) 3 hours credit. Prerequisite: MKT 5023 or an equivalent.
Reviews the methodology essential to marketing's role of guiding the firm's production, distribution, pricing, and communication efforts through marketing research, including designing and conducting customer research and analyzing and communicating research results.
- 5073 Services Marketing**
(3-0) 3 hours credit. Prerequisite: MKT 5023 or an equivalent.
This course entails an in-depth investigation of the nature of services marketing and the special features that distinguish successful services marketing from tangible goods marketing. Attention is given to promoting and making services tangible, blueprinting services, the design of service operations, pricing services, the critical aspects of service delivery, the measurement of service quality; and other topics.
- 5083 Advertising and Promotion Management**
(3-0) 3 hours credit. Prerequisite: MKT 5023 or an equivalent.
Use of communication processes and programs to attain promotional goals; examination of mass and interpersonal forms of communication and the uses of sales promotion tools.
- 5123 Sales Management**
(3-0) 3 hours credit. Prerequisite: MKT 5023.
Examination of current and relevant issues regarding the role of selling in the firm; discussion of communication concepts and managerial processes in goal selection and attainment for sales activities.
- 5673 International Marketing**
(3-0) 3 hours credit. Prerequisite: MKT 5023 or an equivalent.
Analysis of global marketing strategies, including an examination of the cultural, economic, and political dimensions. Focus is on developing alternative market entry strategies and managing longer term competitive marketing adjustments.
- 5963 International Business Internship**
(3-0) 3 hours credit. Prerequisites: Consent of instructor and the student's graduate advisor of record.
Work experience in international business or a public agency.
- 6943 Marketing Internship**
(3-0) 3 hours credit. Prerequisites: Graduate standing, 15 semester credit hours of graduate work, and consent of instructor. Internship must be approved in advance by the Internship Coordinator and the student's graduate advisor of record.
Supervised full- or part-time off-campus work experience and training in marketing. Individual conferences and written reports required.

5983 International Business Essay

(3-0) 3 hours credit. Prerequisites: Consent of instructor and the student's graduate advisor of record.

Original research report on an international management topic.

6951-3 Independent Study

(1-3) 1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record.

Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when the topics vary, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6983 Master's Thesis

(3-0) 3 hours credit. Prerequisite: Permission of the graduate advisor of Record and thesis director.

Thesis research and preparation. May be repeated for credit, but no more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

Master of Business Administration Degree Management Science Concentration

This concentration is designed to offer the opportunity for qualified graduate students to study business administration while developing special expertise in management science and to synthesize the theory and fundamentals of decision analysis with a study of current applicable technology. To achieve this end, students can focus their elective courses on the use of modern methodologies and techniques in the analysis and support of managerial decision-making activities, including the application of computer hardware and software.

Students choosing to concentrate in management science must complete the 21 semester credit hours of courses containing the foundations of knowledge and 12 semester credit hours of electives from the following:

MS	5303	Decision Support Systems
MS	5323	Statistical Methods for Business Analysis
MS	5363	Computer Graphics/Multimedia for Management
MS	5373	Simulation Analysis of Business Systems
MS	5383	Microcomputer Applications in Business

MS	5393	Production Operations Management
MS	5443	Software Entrepreneurship
MS	5453	Management and Control of Quality
MS	6943	Management Science Internship
MS	6953	Independent Study
MS	6973	Special Problems

Additionally, a student may petition the faculty coordinating this concentration to substitute one other College of Business graduate elective for one of the above courses.

COURSE DESCRIPTIONS MANAGEMENT SCIENCE (MS)

- 5003 Quantitative Methods for Business Analysis**
(3-0) 3 hours credit. Prerequisites: MAT 1033 and STA 1063, their equivalents, or consent of instructor.
Introduction to managerial decision analysis using quantitative and statistical tools. Topics include a general framework for decision analysis, decision tables and trees, simulation, linear programming and related techniques, classical optimization, forecasting, and statistical techniques. Uses applicable decision support software. (Formerly MGT 5013. Credit cannot be earned for both MS 5003 and MGT 5013.)
- 5023 Decision Analysis and Production Management**
(3-0) 3 hours credit. Prerequisite: MS 5003 or an equivalent.
Study of applications of quantitative approaches (such as probabilistic, programming, and simulation) to business decision analysis. Emphasis is given to production management applications (such as resource allocation, scheduling, inventory control, capital budgeting) and the use of computerized decision support systems. (Formerly MGT 5023. Credit cannot be earned for both MS 5023 and MGT 5023.)
- 5303 Decision Support Systems**
(3-0) 3 hours credit. Prerequisite: MS 5023.
Study of systems for supporting managerial and personal/professional decision processes. Topics include review of sample decision support systems, methodologies for identifying decision needs, exploration of analysis tools and related computer technologies and software, survey of expert systems and artificial intelligence applications, and hands-on building of systems. (Formerly MGT 5033. Credit cannot be earned for both MS 5303 and MGT 5033.)
- 5323 Statistical Methods for Business Analysis**
(3-0) 3 hours of credit. Prerequisite: MS 5003.
Introduction to multivariate statistical analysis. Topics include multiple regression, analysis of variance, discriminant analysis, conjoint analysis, and factor analysis. Emphasizes the use of computer statistical packages. (Formerly MGT 5323. Credit cannot be earned for both MS 5323 and MGT 5323.)

5363 Computer Graphics/Multimedia for Management

(3-0) 3 hours credit. Prerequisite: MS 5023.

Survey of the state of the art in multimedia applications in business and industry. Study of the processes by which multimedia objects (graphic, audio, video, and animation) are created, captured, edited, and inserted into documents, presentations, and computer-based learning environments. Emphasis is given to managerial applications delivered via networks, the Internet, and CD-ROM technologies. (Formerly MGT 5363. Credit cannot be earned for both MS 5363 and MGT 5363.)

5373 Simulation Analysis of Business Systems

(3-0) 3 hours credit. Prerequisite: MS 5023.

Study of computer simulation techniques in the analysis of business decision situations. Currently available tools, including general purpose simulation languages, spreadsheets, and graphics programs, are explored. Applications from a wide spectrum of areas are discussed. (Formerly MGT 5373. Credit cannot be earned for both MS 5373 and MGT 5373.)

5383 Microcomputer Applications in Business

(3-0) 3 hours credit. Prerequisite: MS 5003 or an equivalent.

Survey of microcomputer hardware, software, and applications. Emphasizes available financial planning, word processing, graphics, desktop publishing, networking, program generation, database systems, expert systems, communications, multimedia, and their applications in business. (Formerly MGT 5383. Credit cannot be earned for both MS 5383 and MGT 5383.)

5393 Production Operations Management

(3-0) 3 hours credit. Prerequisite: MS 5023.

Survey of the body of knowledge concerning the management of operations. Considers manufacturing and service principles. The course reviews a variety of topics necessary in the field of production and inventory management, including logistics and distribution process. The unique nature of service operations is stressed.

5443 Software Entrepreneurship

(3-0) 3 hours credit. Prerequisite: MS 5383.

Study of the business of commercial software development and the processes for moving computer software from design to implementation and subsequently to the marketplace. Topics include the survey of existing software and hardware, legal considerations, packaging and documentation, and economics of software development and marketing alternatives. Emphasis is given to actual software development during this course. (Formerly MGT 5443. Credit cannot be earned for both MS 5443 and MGT 5443.)

5453 Management and Control of Quality

(3-0) 3 hours credit. Prerequisite: MS 5023.

An examination of the fundamental nature of quality assurance, its strategic importance in business and industry, and the economic impact of quality. Theoretical and management issues relating to quality problem solving are emphasized. The contribution of the leaders in modern quality management

are discussed. (Formerly MGT 5453. Credit cannot be earned for both MS 5453 and MGT 5453.)

6943 Management Science Internship

(3-0) 3 hours credit. Prerequisites: Graduate standing, 15 semester credit hours of graduate work, and consent of instructor. Internship must be approved in advance by the Internship Coordinator and the student's graduate advisor of record. Supervised full- or part-time off-campus work experience and training in management science. Individual conferences and written reports required.

6951-3 Independent Study

(1-3) 1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record.

Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when the topics vary, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6983 Master's Thesis

(3-0) 3 hours credit. Prerequisite: Permission of the graduate advisor and thesis director.

Thesis research and preparation. May be repeated for credit, but no more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

Master of Business Administration Degree Management of Technology Concentration

This concentration is designed to offer the opportunity for qualified graduate students, primarily with a nontechnical background, to study business administration while developing special expertise in the management of technology. To achieve this end, students can focus their elective courses on developing general managerial skills applicable to technology-based organizations, leading professional and technical employees, and integrating the various functions of an organization in today's rapidly changing technological environment.

Students choosing to concentrate in the management of technology must complete the 21 semester credit hours of courses containing the foundations of knowledge and 12 semester credit hours as follows:

A. Required courses (6 hours):

MOT	5163	Management of Technology
MOT	5223	Management of Professional Personnel

B. Elective courses (6 hours from the following):

IS	6403	Information Resource Management
MOT	5053	Marketing Innovations
MOT	5173	Technology Transfer: The Theory and Practice of Knowledge Utilization
MOT	5213	Organizational Systems for Management of Technology
MOT	6933	Professional Report
MOT	6943	Management of Technology Internship
MS	5303	Decision Support Systems
MS	5373	Simulation Analysis of Business Systems
MS	5393	Production Operations Management
MS	5453	Management and Control of Quality

Additionally, a student may petition the faculty coordinating this concentration to substitute one other College of Business graduate elective for one of the above courses.

Master of Science Degree in Management of Technology

The Master of Science in Management of Technology (M.S. MOT) differs significantly from both the M.B.A. and the M.B.A. with a concentration in Management of Technology. The M.S. MOT has a different set of required common body of knowledge courses and focuses on management issues and skills required to help bring into the marketplace and manage advances in technology in the form of ideas, goods, and services. Courses are from both the College of Business and the College of Sciences and Engineering.

Program Admission Requirements. For admission to the M.S. MOT program, applicants must have an undergraduate or graduate degree in a scientific, engineering, or mathematical discipline from an accredited university or college and meet University-wide graduate admission requirements and the following additional requirements:

1. An approximate overall average of 3.0 in all work completed at the undergraduate level.
2. An approximate composite score of 500 with no component less than the 20th percentile on the Graduate Management Admission Test (GMAT) or equivalent score on other relevant tests, with the results submitted to the Office of Admissions and Registrar before consideration for admission. GMAT results will only be accepted if the test was taken no more than five years before the date of application. Applications for the GMAT or information on the test may be obtained from GMAT, Educational Testing Service, P.O. Box 6103, Princeton, New Jersey, 08541-6103, (609) 771-7330.

Applicants are evaluated by the M.S. MOT Admissions Subcommittee based on the above criteria. Those who do not meet the admissions requirements may be considered on an individual basis by the committee.

The following courses constitute the M.S. MOT core and are required for students with limited exposure to undergraduate business courses; however, the number of necessary M.S. MOT core courses is determined on a case-by-case basis depending on the student's background and undergraduate and graduate courses completed. Credit for these courses may not be applied toward degree requirements for the Master of Science in Management of Technology:

ACC	5003	Financial Accounting Concepts
BLW	5003	Legal Environment of Business
ECO	5003	Economic Theory and Policy
FIN	5003	Business Finance
IS	5003	Introduction to Information Systems
MGT	5003	Conceptual Foundations of Management
MKT	5003	Introduction to Marketing
MS	5003	Quantitative Methods for Business Analysis

Degree Requirements. The M.S. MOT program requires 33 semester credit hours of work beyond any hours acquired in the M.S. MOT core courses.

- A. Candidates are required to successfully complete the following 21 semester credit hours:

EGR	5613	New and Emerging Technologies
EGR	5623	Issues in Engineering Management
MOT	5163	Management of Technology
MOT	5203	Strategic Management of Technology
MOT	5223	Management of Professional Personnel
MOT	5053	Marketing Innovations
MOT	6923	Directed Research in Management of Technology
- B. Candidates must complete an additional 9 semester credit hours as approved by the M.S. MOT Candidacy and Program of Study Subcommittee
- C. Candidates must complete a Professional Report (MOT 6933 Professional Report) under the guidance of a graduate faculty advisor
- D. Candidates must pass a comprehensive examination administered by the M.S. MOT Candidacy and Program of Study Subcommittee

COURSE DESCRIPTIONS MANAGEMENT OF TECHNOLOGY (MOT)

5053 Marketing Innovations

(3-0) 3 hours credit. Prerequisite: MKT 5023 or consent of instructor.

An analysis of the role of technology and innovation in modern business practice. Emphasis is on managing technological change to develop business opportunities and competitive advantage. (Formerly MKT 5053. Credit cannot be earned for both MOT 5053 and MKT 5053.)

5163 Management of Technology

(3-0) 3 hours credit. Prerequisite: MGT 5043 or consent of instructor.

Examines a broad range of topics and issues involved in the management of technology, including the international research and development environment and infrastructure; government, industry, and university roles in technology development; managing the research and development function; technology forecasting and assessment; and new product development. (Formerly MGT 5163. Credit cannot be earned for both MOT 5163 and MGT 5163.)

5173 Technology Transfer: The Theory and Practice of Knowledge Utilization

(3-0) 3 hours of credit. Prerequisite: MOT 5053 or consent of instructor.

Technology transfer or diffusion may be defined as the utilization or application of knowledge. The course examines the organizational, behavioral, and communication challenges involved in transferring technology from the research lab to the marketplace in a cost-effective and timely manner.

5183 Design of Experiments for Technology Managers

(3-0) 3 hours credit. Prerequisite: MOT 5163 or consent of instructor.

An applied approach to design of experiments in engineering and scientific settings. Randomized block designs, factorials, two- and three-level factorial and fractional factorial designs, nested and split-plot designs, response surface methods, and robust design methods are studied. Computer statistical packages, including JMP, are used. A project and presentation based on designing an industrial experiment is required.

5203 Strategic Management of Technology

(3-0) 3 hours credit. Prerequisite: Semester of graduation or consent of the Graduate Advisor of Record.

Development of a conceptual framework for strategy, its definition, elements, and relationships to the basic functions of management of technology. Considers the impact of technology and environmental forces on strategic management of the organization. (Formerly MGT 5203. Credit cannot be earned for both MOT 5203 and MGT 5203.)

- 5213 Organizational Systems for Management of Technology**
 (3-0) 3 hours credit. Prerequisite: MGT 5043 or consent of instructor.
 Focuses on organizational systems commonly found in modern organizations dealing with technology, innovation, and creativity. Considers alternative organizing concepts, interfacing and integrating considerations, and decision-making and control systems. (Formerly MGT 5213. Credit cannot be earned for both MOT 5213 and MGT 5213.)
- 5223 Management of Professional Personnel**
 (3-0) 3 hours credit. Prerequisite: MGT 5043 or consent of instructor.
 The study of behavior in professional and technical organizations. Focuses on the characteristics of professional and technical personnel, status and role systems within the professional organization, and communication and conflict within and among professional groups. (Formerly MGT 5223. Credit cannot be earned for both MOT 5223 and MGT 5223.)
- 5233 Advanced Topics in Project Management**
 (3-0) 3 hours credit. Prerequisite: MOT 5163 or consent of instructor.
 An examination of the philosophy and process for the management of ad hoc activities in organizations. Includes topics such as engineering economic analysis, project screening and selection, multiple-criteria methods for evaluation, project structure, project scheduling, and resource management. Synthesis and evaluation are emphasized. A basic understanding of project management is required.
- 6923 Directed Research in Management of Technology**
 (3-0) 3 hours credit. Prerequisite: Permission of the graduate advisor and the faculty advisor/director.
 A directed research course to prepare students for MOT 6933 Professional Report. The course emphasizes the understanding of scientific research problem solving, including research problems in management of technology, the design and methodology of research solutions to those problems, and the relations between problem and design. Presentation of assigned project is required.
- 6933 Professional Report**
 (3-0) 3 hours credit. Prerequisite: Permission of the graduate advisor and the faculty advisor/director.
 Research and preparation of an in-depth study of a complex business problem. Credit is awarded upon completion of the written professional report.
- 6943 Management of Technology Internship**
 (3-0) 3 hours credit. Prerequisites: Graduate standing, 15 semester credit hours of graduate work, and consent of instructor. Internship must be approved in advance by the Internship Coordinator and the student's graduate advisor of record.
 Supervised full- or part-time off-campus work experience and training in management of technology. Individual conferences and written reports are required.

6951-3 Independent Study

(1-3) 1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record.

Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6961 Comprehensive Examination

(1-0) 1 hour credit. Prerequisite: Approval of the appropriate graduate studies committee to take the Comprehensive Examination.

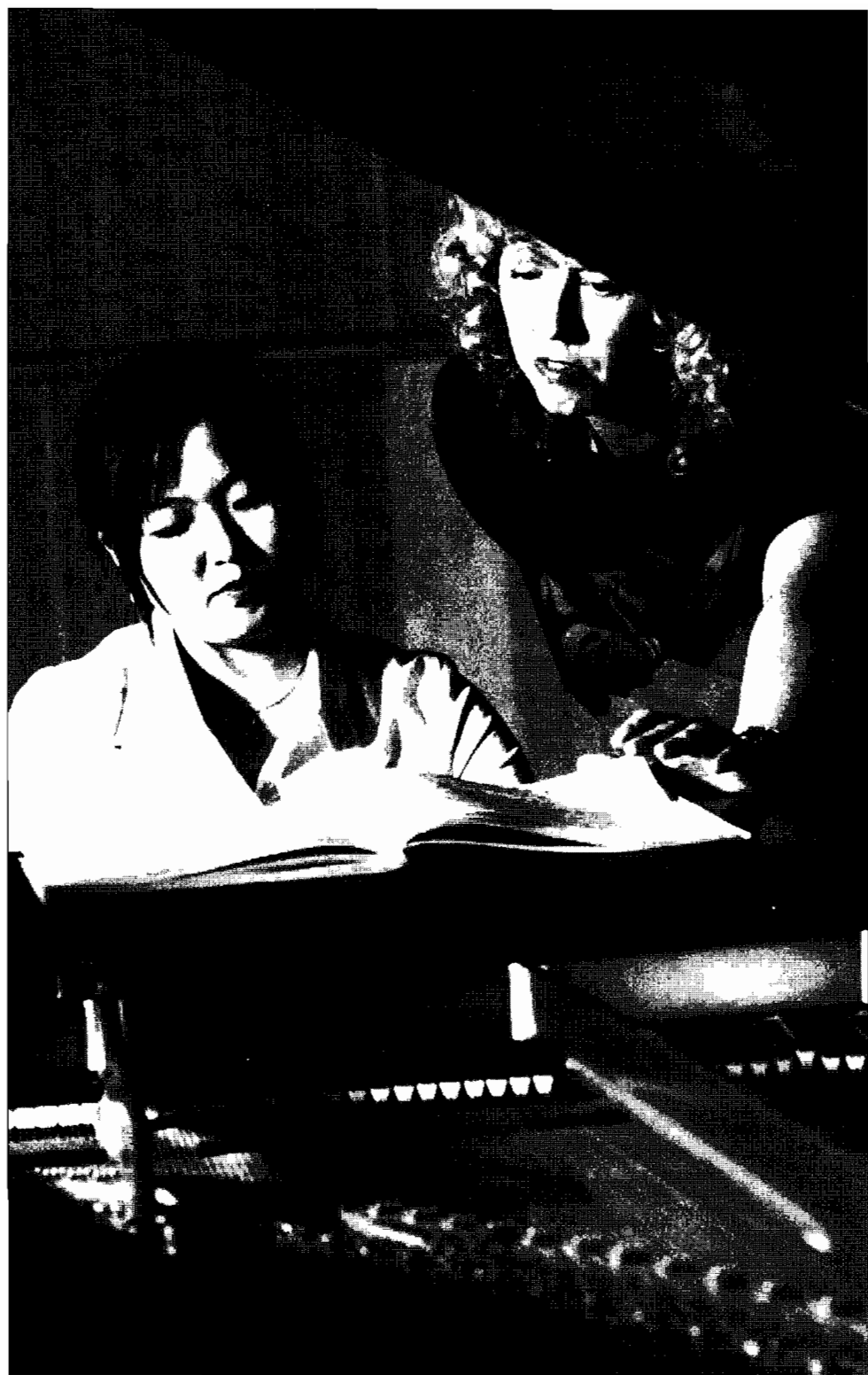
Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when the topics vary, but no more than 6 hours, regardless of discipline, will apply to a master's degree.

**COLLEGE OF FINE ARTS
AND HUMANITIES**



COLLEGE OF FINE ARTS AND HUMANITIES

DIVISION OF ARCHITECTURE AND INTERIOR DESIGN

Master of Architecture Degree

The Master of Architecture is a first professional degree in architecture in preparation for becoming a licensed architect. It consists of a two-year sequence of courses that must be preceded by a preprofessional four-year degree such as the undergraduate Bachelor of Science in Architecture offered at UTSA. The program gives students a thorough background in the principles and techniques of architectural design and theory that meets the criteria established by the National Architectural Accreditation Board (NAAB).

Students may select one of two specializations: International Practice or Historic Preservation. The specialization in International Practice focuses on the unique characteristics of international design and development by addressing sustainable design and professional practice within the context of international issues. The specialization in Historic Preservation acquaints students with preservation theory and techniques, including new construction and adaptive use approaches in community design. Both specializations place particular emphasis on the architecture of South Texas and the Rio Grande Valley on both sides of the river.

According to the National Architectural Accreditation Board

In the United States, most state registration boards require a degree from an accredited professional 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. Programs may be granted a five-year, three-year, or two-year term of accreditation, depending on their degree of conformance with established educational standards. Masters degree programs may consist of a preprofessional undergraduate degree and a professional graduate degree, which, when earned sequentially, comprise an accredited professional education. However, the preprofessional degree is not, by itself, recognized as an accredited degree.

The NAAB grants candidacy status to new programs that have developed viable plans for achieving initial accreditation. Candidacy status indicates that a program should be accredited at a future date, if its plan is properly implemented. (*NAAB Guidelines*, 1998, p. 76)

The Master of Architecture program received candidacy status in 1997.

Program Admission Requirements

Applicants must submit Graduate Record Examination (GRE) scores by the deadline listed in this catalog. Applicants must also meet University-wide admission requirements and must have completed a preprofessional architecture curriculum with a minimum grade-point average of at least 3.0 in the last 60 hours of undergraduate studies and 3.0 in architecture courses. Students lacking a preprofessional degree may be offered conditional admission with the stipulation that they undertake additional undergraduate coursework before graduate study.

Application Materials

Each applicant must submit a portfolio, two letters of recommendation from persons knowledgeable about the student's ability to undertake graduate work, and a personal statement of professional goals discussing areas of special interest. The portfolio should demonstrate the student's creative and communication skills through samples of past work and projects (do not include slides or original work). Contact the Division of Architecture and Interior Design at (210) 458-4299 to receive an information packet and application forms.

The portfolio, letters of recommendation, and professional statement should be sent directly to the Graduate Advisor of the Architecture Program by the University's admission deadlines. The application form and fees should be sent directly to the Office of Graduate Studies.

Degree Requirements. The minimum number of semester credit hours required for this degree, exclusive of coursework or other study required to remove admission deficiencies, is 48. Credit toward the program is earned only for the grades "A," "B," and "C." Students must also maintain an overall grade-point average of 3.0.

Students admitted to the program must consult the Graduate Advisor of Record for specific program requirements for their individual study sequence. The program does not require proficiency in a foreign language, although proficiency in Spanish will enhance the student's ability to participate in the international aspects of the program.

Candidates for the degree must complete

A. 18 semester credit hours of required courses:

ARC	5173	Architectural Theory and Criticism
ARC	5613	American Architecture
ARC	6146	Advanced Design Studio (12 hours)

B. 9 semester credit hours of prescribed coursework depending upon specialization in either of the following areas:

Historic Preservation

ARC	5203	History and Theory of Preservation
ARC	5233	Architectural Surveys and Measured Drawings
ARC	6413	Preservation Technology

International Practice

ARC	5303	Topics in International Practice
ARC	6123	Morphology of South Texas and the Borderlands
ARC	6233	Design and Development of Multicultural Communities

- C. 15 semester credit hours of electives. Students interested in emphasizing construction management may take selected courses in architecture, civil engineering, finance, and management of technology. Elective courses must constitute a coherent program of scholarship, and the student's elective program must be prepared in consultation with the Graduate Advisor of Record.
- D. 6 semester credit hours of ARC 6983 Master's Thesis

Comprehensive Examination. A candidate for the Master of Architecture degree must, in addition to other requirements, pass a written and oral comprehensive examination. Students must be registered during the semester in which they are taking the Comprehensive Examination. Comprehensive Examinations are given only to students who meet the following requirements:

1. have satisfied all admission conditions
2. are in good academic standing
3. have an approved program of study
4. have selected a supervising professor and thesis committee with an approved thesis topic
5. if registered for no other course in the semester the comprehensive examination is taken, are enrolled in ARC 6961 Comprehensive Examination.

COURSE DESCRIPTIONS ARCHITECTURE (ARC)

- 5133 Advanced and International Professional Practice and Ethics**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
A seminar dealing with national and international business and legal environments in the design and construction industry. Topics include agreement and delivery options, forms of construction, project procedures and administration, liability, and ethics.
- 5143 Sustainable Architecture Seminar**
(3-0) 3 hours credit.
Review of the natural and historical practices that have created current regional ecological conditions. Investigation of current design practices from scientific, ethical, economic, practical, and aesthetic perspectives and the architect's responsibility and liability in the creation and sustainability of conditions that protect and enhance ecological systems.

- 5173 Architectural Theory and Criticism**
(3-0) 3 hours credit.
Seminar survey of historical basis and contemporary development of architectural theory and the criteria used in architectural criticism from both Western and non-Western perspectives.
- 5203 History and Theory of Preservation**
(3-0) 3 hours credit.
A seminar on the history, philosophy, and methodology of historic preservation and restoration.
- 5213 Theories and Philosophies of Regionalism**
(3-0) 3 hours credit.
Seminar focusing on issues of regionalism; appropriate interventions between the natural environment and the history and traditions of the built environment that together maintain and contribute to a sense of place.
- 5233 Architectural Surveys and Measured Drawings**
(3-0) 3 hours credit. Prerequisite: ARC 5203.
Documentation and interpretation of sites and buildings and graphic recording techniques.
- 5303 Topics in International Practice**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
A seminar focusing on the professional, legal, social, and cultural issues that affect international architecture, construction, and urban development.
- 5313 Housing Design**
(3-0) 3 hours credit.
Evolution of housing design with emphasis on sustainable design methods, materials, techniques, and solutions applicable to the Texas-Mexico region.
- 5403 Topics in Historic Preservation**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Selected topics in architecture, design, preservation, and planning. May be repeated for credit when topics vary, but not more than 6 hours will apply to the Master of Architecture degree.
- 5423 Legal and Economic Aspects of Preservation**
(3-0) 3 hours credit.
Laws and regulations that affect preservation of the built environment, nationally, regionally, and locally. Fundamentals of legal protection for and regulation of historic cultural resources in light of contemporary attitudes toward the historic environment. Economic bases of the use of historic buildings and sites examined in terms of contemporary social and cultural attitudes that determine effective strategies of preservation action.
- 5613 American Architecture**
(3-0) 3 hours credit.
Development of the architecture of North, Central, and South America from the earliest human settlements to the present.

- 5633 Construction Management**
 (3-0) 3 hours credit. Prerequisite: Consent of instructor.
 Organization of construction resources and activities to include consideration of scheduling, methods of construction, project planning and management, cost accounting, and personnel utilization.
- 6113 Special Topics**
 (3-0) 3 hours credit. Prerequisite: Consent of instructor.
 Selected topics in architecture, international practice, historic preservation, and construction management. May be repeated for credit when topics vary, but not more than 6 hours will apply to the Master of Architecture degree.
- 6123 Morphology of South Texas and the Borderlands**
 (3-0) 3 hours credit.
 A seminar analyzing the infrastructure of South Texas and the borderlands and their evolution and interaction.
- 6133 Advanced Environmental Systems**
 (3-0) 3 hours credit.
 Principles of thermal, acoustical, and radiant enclosure design related to recent developments of criteria, quantification methods, systems integration, new and alternative materials and methods, design tools, and simulations. Understanding the relationships between environmental factors, economics, and architectural goals with emphasis on local and regional conditions.
- 6146 Advanced Design Studio**
 (1-10) 6 hours credit.
 International practice, historic preservation, and development issues as criteria in architectural design. May be repeated for credit.
- 6233 Design and Development of Multicultural Communities**
 (3-0) 3 hours credit.
 A study of sustainable design, planning, economic, financial, and environmental issues that shape multicultural communities in the Americas.
- 6413 Preservation Technology**
 (1-4) 3 hours credit.
 Techniques of preservation: methods of analysis, history of materials, and technology used in old buildings. Emphasis on buildings as integrated sets of subsystems and how these are affected by the processes of material deterioration, conservation, and techniques of intervention. May be repeated for credit once when topics vary.
- 6423 Architectural Conservation Theory**
 (3-0) 3 hours credit.
 A study of the problems of older sites and buildings and the techniques employed in preserving and restoring them.

6613 Advanced Structures

(3-0) 3 hours credit.

Analysis of building structural systems: design of connection details, economics, design codes, and supervision practices.

6943 Professional Internship

3 hours credit. Prerequisite: Graduate standing, 18 semester hours of graduate work, and consent of instructor.

Supervised professional practice experience with public agencies or private firms. Individual conferences and written reports required. May be repeated for credit, but not more than 6 hours will apply to the Master of Architecture degree.

6951-3 Independent Study

1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the Graduate Advisor of Record.

Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the Master of Architecture degree.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the appropriate graduate studies committee to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required for the term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance of the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination). Credit earned in ARC 6961 may not be counted toward the 48 hours required for the Master of Architecture degree.

6983 Master's Thesis

3 hours credit. Prerequisite: Graduate standing and permission of the Architecture Graduate Advisor and thesis director.

May be repeated for credit, but not more than 6 hours will apply to the Master of Architecture degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

DIVISION OF ENGLISH, CLASSICS, PHILOSOPHY, AND COMMUNICATION

Master of Arts Degree in English

The Master of Arts degree in English offers the student an opportunity to acquire a general knowledge of English and American literature, to understand the historical context in which that literature was produced, to develop skills in critical analysis, and to investigate the principal kinds of literary, rhetorical, and linguistic research.

Program Admission Requirements. In addition to satisfying the University-wide graduate admission requirements, the applicant must have completed at least 18 semester credit hours of work (exclusive of freshman courses) in English with a grade-point average of 3.3 (on a 4.0 scale) in all work taken in English at the upper-division and graduate levels. This work must include at least 12 semester credit hours of upper-division English literature courses, and the student must have a grade-point average of 3.3 in these courses. The applicant must submit scores from the Graduate Record Examination (GRE) general test. These scores will be used as one element in the evaluation of the applicant. These requirements may be waived in unusual circumstances upon the approval of the Graduate Studies Committee.

Degree Requirements. The minimum number of semester credit hours required for this degree, exclusive of coursework or other study required to remove admission deficiencies, is 36. Any grade lower than "B" in a graduate course will not count toward the 36 semester credit hours of coursework required in items A and B below.

Candidates for the degree must complete the following requirements:

A. 24 semester credit hours in the major, distributed as follows:

1. Core Courses. 6 semester credit hours required:

ENG	5013	Introduction to the Graduate Study of Literature (must be taken in the student's first semester)
ENG	5053	Topics in Literary Genres (3 hours)

2. Historical Periods. 9 semester credit hours selected from the following:

ENG	5223	Medieval Literature
ENG	5313	Renaissance Literature
ENG	5413	Restoration and Eighteenth-Century Literature
ENG	5513	Nineteenth-Century British Literature
ENG	5613	Nineteenth-Century American Literature
ENG	5733	Twentieth-Century British Literature or
ENG	5743	Twentieth-Century American Literature

3. Major Authors. 6 semester credit hours selected from the following:

ENG	5213	Chaucer Studies
ENG	5323	Shakespeare Studies
ENG	5343	Milton Studies

4. 3 semester credit hours from one of the following groups:

a. Literary Studies

ENG	5043	Studies in Literature: Major Themes
ENG	5073	Topics in Individual Authors
ENG	5123	Theory of Literature
ENG	5173	Theory and Practice of Teaching Literature
ENG	5193	Contemporary Literary Theory
ENG	5633	Topics in the Study of Literature
ENG	5753	World Literatures in English

b. Language

ENG	5813	History of the English Language
ENG	5823	Principles of English Linguistics

c. Rhetoric and Composition

ENG	5133	Development of Rhetoric and Composition
ENG	5163	Topics in Composition
ENG	5183	Theory and Practice of Teaching Composition

d. Creative Writing

ENG	5143	Creative Writing: Fiction
ENG	5153	Creative Writing: Poetry

B. 12 semester credit hours of electives in English. Students who have a grade-point average of 3.3 or better, with the approval of the Graduate Studies Committee, may select a coherent program of 12 semester credit hours in Mexican American studies, cultural studies, the study of women and gender, linguistics, or other approved areas. Students who wish to choose electives outside of English must consult with the Graduate Advisor of Record before enrolling in elective courses.

Note: ENG 5013 must be taken in the student's first semester.

As soon as a student completes 12 hours of graduate coursework in English, he or she must meet with the Graduate Advisor to draw up a program of study.

In addition to the semester-credit-hour requirements set forth above, candidates for the degree are required to pass the Comprehensive Examination. The Comprehensive Examination, composed of both written and oral portions, is offered three times a year and is normally taken in the semester in which the candidate is due to complete his or her graduate study. The Comprehensive Examination may be taken only twice.

A thesis is not written for the Master of Arts degree in English.

COURSE DESCRIPTIONS ENGLISH (ENG)

- 5013 Introduction to the Graduate Study of Literature**
(3-0) 3 hours credit. Prerequisite: Admission to the Master of Arts Program in English or consent of instructor.
Introduction to the premises, concepts, and methods of literary study, including literary history, terminology, bibliography, and various critical approaches to literature. Must be taken in the student's first semester.
- 5043 Studies in Literature: Major Themes**
(3-0) 3 hours credit. Prerequisite: Consent of the Graduate Advisor of Record in English.
This course will explore an important literary theme, using works from all three major genres and works written centuries apart, including some works composed before 1700. May be repeated for credit when topics vary, but no more than 3 hours of ENG 5043 may be counted toward the 36 hours required for the Master of Arts degree in English.
- 5053 Topics in Literary Genres**
(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.
Consideration of texts selected to illustrate the structural and conceptual properties of a given genre, e.g., poetry, fiction, or drama. May be repeated for credit when topics vary.
- 5073 Topics in Individual Authors**
(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.
Reading and analysis of the works of one or more major authors. May be repeated for credit when topics vary.
- 5123 Theory of Literature**
(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.
Concentration on the history of literary theory, focusing on the major texts and statements by such figures as Plato, Aristotle, Renaissance poets, the Romantics, Victorians, and moderns.
- 5133 Development of Rhetoric and Composition**
(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.
Survey of the development of rhetorical theory, with emphasis on how present composition theory and practice reflect earlier traditions.

5143 Creative Writing: Fiction

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

Intensive workshop in creative writing for students interested in developing their ability to write fiction. May be repeated for credit, but not more than 6 hours of ENG 5143, ENG 5153, or a combination of the two will apply to the Master of Arts degree in English.

5153 Creative Writing: Poetry

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

Intensive workshop in creative writing for students interested in developing their ability to write poetry. May be repeated for credit, but not more than 6 hours of ENG 5143, ENG 5153, or a combination of the two will apply to the Master of Arts degree in English.

5161 Practicum in Rhetoric

(1-0) 1 hour credit. Prerequisites: Completion of or concurrent enrollment in ENG 5013 and consent of instructor.

Study of the rhetorical and linguistic foundations of written English. May be repeated for credit.

5163 Topics in Composition

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Consideration of individual topics in composition. Topics may be drawn from such areas as linguistic theory, cognitive theory, rhetorical theory, and composition research. May be repeated for credit when topics vary, but not more than 6 hours will apply to the Master of Arts degree in English.

5173 Theory and Practice of Teaching Literature

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Discussion of literary interpretations that illuminate classic and contemporary texts to form the basis of teaching. Applications of theory and research to the teaching of literature.

5183 Theory and Practice of Teaching Composition

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Introduction to current research in composition and applications to the writing process.

5193 Contemporary Literary Theory

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Study of recent developments and movements in literary theory, such as structuralism, reader response theory, deconstruction, feminism, historicism, and cultural studies.

5213 Chaucer Studies

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Critical study of Chaucer's major poetry in the context of his times. To be read in Middle English.

5223 Medieval Literature

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Critical study of major works from the Anglo-Saxon period through the fifteenth century, excluding Chaucer. Some readings in modern translation, some in Middle English.

5313 Renaissance Literature

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Critical survey of verse, drama, and prose of the sixteenth and seventeenth centuries, excluding Shakespeare and Milton; emphasis on such writers as Spenser, Marlowe, Donne, Jonson, Herbert, and Marvell.

5323 Shakespeare Studies

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Reading and analysis of representative plays.

5343 Milton Studies

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Reading and analysis of the major poems and selected prose.

5413 Restoration and Eighteenth-Century Literature

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Study of the transition from Neoclassicism to Romanticism; emphasis on such writers as Dryden, Pope, Swift, Thomson, Fielding, Johnson, and Burns.

5513 Nineteenth-Century British Literature

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Reading and analysis of verse and prose of major nineteenth-century writers; emphasis on such writers as Austen, Wordsworth, Coleridge, Scott, Tennyson, Eliot, Arnold, and Dickens.

5613 Nineteenth-Century American Literature

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Reading and analysis of verse and prose of nineteenth-century American writers; emphasis on such writers as Hawthorne, Emerson, Thoreau, Melville, Dickinson, Whitman, and Twain.

5633 Topics in the Study of Literature

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Exploration of the ways that important texts, theories, or cultural or intellectual movements have shaped the study of literature and literary forms. May be repeated for credit when topics vary, but not more than 6 hours will apply to the Master of Arts degree in English.

5733 Twentieth-Century British Literature

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Critical survey of British poetry, fiction, and drama from 1900 to the present; emphasis on such writers as Conrad, Yeats, Joyce, Woolf, Lawrence, Beckett, and Lessing.

5743 Twentieth-Century American Literature

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Critical survey of American poetry, fiction, and drama from 1900 to the present; emphasis on such writers as Eliot, Faulkner, O'Neill, Hemingway, Miller, Lowell, and Morrison.

5753 World Literatures in English

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Critical survey of a selected grouping of world literatures composed in English, such as commonwealth literature, literature of the Indian subcontinent, or Caribbean literature. The focus will be on such writers as Margaret Atwood, Chinua Achebe, and Derek Walcott.

5813 History of the English Language

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Study of the historical development of the lexicon and the phonological, morphological, and syntactic patterns of English. Attention to the dialectal variety during the early stages of the language as well as to the distinctive characteristics of the Old, Middle, and Modern English periods.

5823 Principles of English Linguistics

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in ENG 5013.

Introduction to the systematic aspects of language—the phonology, morphology, and syntax—along with an examination of the social, psychological, and historical factors that shape language.

6951,3 Independent Study

1 or 3 hours credit. Prerequisites: ENG 5013 and permission in writing (form available) of the instructor and the Graduate Advisor of Record.

Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated

for credit, but not more than 6 hours, regardless of discipline, will apply to the Master of Arts degree in English.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the appropriate graduate studies committee to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated once. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination). Credit earned in ENG 6961 may not be counted in the 36 hours required for the Master of Arts degree in English.

6973 Special Problems

3 hours credit. Prerequisites: ENG 5013 and consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. May be repeated for credit when topics vary, but not more than 6 hours, regardless of discipline, will apply to the Master of Arts degree in English.

COURSE DESCRIPTIONS COMMUNICATION (COM)

5213 Principles of Print and Multimedia Design

(3-0) 3 hours credit.

Principles and theory of design methodology for print and visual materials. Emphasis on conceptualizing print and multimedia products for information delivery, from assessment of needs and purpose to problem solving and implementation. Hands-on introduction to tools and techniques for production.

5223 Multimedia Design and Production I

(3-0) 3 hours credit. Prerequisite: COM 5213.

Introduction to the design and development of multimedia. Advanced study of conceptualization. Hands-on skill development in creating basic digital elements for use in multimedia, such as graphics and animation, and combining these elements into interactive programs.

5233 Multimedia Design and Production II

(3-0) 3 hours credit. Prerequisite: COM 5223.

Advanced skill development in multimedia production techniques. Incorporation of advanced features such as audio, video, and search and query features of interactive programs. Introduction to theory and techniques of field video production.

5253 Advanced Video Production Processes

(3-0) 3 hours credit. Prerequisite: COM 5233 or consent of instructor.

Advanced theory and techniques of video production designed to develop skills in all aspects of electronic video production. The course includes all preproduction, production, and postproduction elements related to the production of video programs for promotion, teleconferencing, and education and distance learning.

DIVISION OF FOREIGN LANGUAGES

Master of Arts Degree in Spanish

The Master of Arts degree in Spanish offers the student the opportunity for an in-depth view of Hispanic literatures, cultures, and language, underscoring the unity of the Hispanic world rather than its national components. Elective courses in linguistics offer an opportunity to further the student's grasp of the Spanish language in its geographical, cultural, and social variations. Elective courses in foreign languages allow students wanting an instruction emphasis to gain expertise in approaches to instructing and testing foreign languages. Within the Master of Arts degree in Spanish, concentrations are offered in Hispanic Cultures, Hispanic Literatures, and Spanish Language.

Program Admission Requirements. In addition to satisfying the University-wide graduate admission requirements, applicants are expected to have a bachelor's degree with 12 or more upper-division hours in Hispanic cultures, literatures, or linguistics and a mastery of oral and written skills in Spanish in an academic register. Upper-division grammar, oral communication, and language courses may not be included in this requirement. Students are required to have written and oral proficiencies assessed during their first semester of study.

A grade-point average of 3.0 (on a 4.0 scale) is required in undergraduate coursework in Spanish.

Degree Requirements. The number of semester credit hours required for this degree, exclusive of coursework or other study required to remove admission deficiencies, is 36. A maximum of one "C" shall be applicable toward coursework for the Master of Arts degree. Students are strongly encouraged to take SPN 5373 Introduction to Graduate Spanish Studies early in their program, particularly if they are undecided about their concentration. Achievement of 2+ (advanced-high) on the OPI scale of oral and written proficiency in Spanish is required as part of the exit criteria for the Master of Arts in Spanish.

Candidates for the degree must complete the following:

- A. 15 semester credit hours of concentration courses selected from one of the concentration areas:

Hispanic Cultures

SPN	5413	History of Ideas in the Hispanic World
SPN	5463	Spanish Civilization
SPN	5473	Latin American Civilization

6 additional hours selected from the following:

SPN	5103	Spanish Film
SPN	5113	Latin American Film
SPN	5483	Studies in Hispanic Culture
SPN	5953	A Functional-Notional Approach to Contemporary Hispanic Culture

Hispanic Literatures

SPN	5633	Spanish Golden Age Literature or
SPN	5643	<i>Don Quijote</i>
SPN	5703	Modern Spanish Literature
SPN	5773	Contemporary Latin American Literature

6 additional hours selected from the following:

SPN	5633	Spanish Golden Age Literature
SPN	5643	<i>Don Quijote</i>
SPN	5803	Mexican American Literature
SPN	5813	Studies in Hispanic Literature

Spanish Language

SPN	5843	History of the Spanish Language
SPN	5863	Spanish Phonetics and Phonology
SPN	5883	Spanish Morphology and Syntax

6 additional hours selected from the following:

SPN	5853	Spanish of the Southwest
SPN	5893	Hispanic Dialectology
SPN	5903	Studies in Hispanic Linguistics

(foreign languages and linguistics courses upon advisement)

- B. 6 semester credit hours from the two concentrations not chosen (3 hours each)
- C. 9 semester credit hours of electives in Spanish, foreign languages, linguistics, or as approved by the Graduate Advisor of Record

Students wanting an instruction emphasis should take three of the following courses among their electives:

SPN	5883	Spanish Morphology and Syntax
SPN	5953	A Functional-Notional Approach to Contemporary Hispanic Culture
FL	5003	Foreign Language Studies I
FL	5013	Foreign Language Testing
FL	5023	Foreign Language Studies II
FL	5033	Foreign Language and Intercultural Communication
FL	5043	Principles of Translation

In addition to the above options, electives may comprise the following:

LNG	5013	Sociolinguistics
LNG	5153	Topics in Contemporary Linguistics
SPN	5373	Introduction to Graduate Spanish Studies
SPN	6813	Seminar in Hispanic Studies

D. 6 semester credit hours from Option I or Option II

Option I. The satisfactory completion of a thesis in accordance with University regulations as stated under Options for Master's Degrees in chapter 6, Master's Degree Regulations.

Option II. An additional 6 semester credit hours of coursework in Spanish, foreign languages, or linguistics graduate courses as approved by the Division Graduate Advisor of Record.

In addition to the semester-credit-hour requirements set forth above, candidates for the degree are required to pass the Comprehensive Examination. The examination is designed to test the student's knowledge in his or her concentration area as well as to evaluate critical abilities and is normally administered in the term in which the candidate expects to receive the degree. Credit earned in SPN 6961 may not be counted in the 36 hours required for the Master of Arts degree in Spanish.

COURSE DESCRIPTIONS SPANISH (SPN)

- 5103 Spanish Film**
(3-0) 3 hours credit.
Spanish society, history, culture, and language of film as interpreted by representative directors.
- 5113 Latin American Film**
(3-0) 3 hours credit.
Latin American society, history, culture, and language of film as interpreted by representative directors.
- 5373 Introduction to Graduate Spanish Studies**
(3-0) 3 hours credit
An introduction to graduate studies in Spanish. Emphasis on critical writing and research skills, including bibliography and electronic media. May incorporate critical approaches to Spanish literature, culture, and linguistics (recommended as preparation for Option I, Thesis).
- 5413 History of Ideas in the Hispanic World**
(3-0) 3 hours credit.
Selected works by Spanish and/or Latin American authors, representative of major currents of thought affecting the evolution of Hispanic cultural history.
- 5463 Spanish Civilization**
(3-0) 3 hours credit.
A study of the social, political, and cultural history of Spain from prehistory (the Caves of Altamira) to the present.

5473 Latin American Civilization

(3-0) 3 hours credit.

A study of the social, political, and cultural history of the Latin American countries from pre-Columbian civilizations through the conquest, colonization, and independence to the present.

5483 Studies in Hispanic Culture

(3-0) 3 hours credit.

Studies of different facets of Hispanic culture not normally available as part of regular course offerings. May be repeated for credit when topics vary.

5633 Spanish Golden Age Literature

(3-0) 3 hours credit.

Spanish literature of the sixteenth and seventeenth centuries, in the context of medieval antecedents. Focus on ideological background, stylistic devices, literary motifs, and modern critical and theoretical analyses. May be repeated for credit when topics vary.

5643 *Don Quijote*

(3-0) 3 hours credit.

A study of the novel's narrative structure, literary motifs, stylistic devices, and ideological background. Analysis of critical and theoretical approaches. The meaning of *Don Quijote* in Western tradition.

5703 Modern Spanish Literature

(3-0) 3 hours credit.

Selected literary works of the twentieth century. May be repeated for credit when topics vary.

5773 Contemporary Latin American Literature

(3-0) 3 hours credit.

Selected literary works from the vanguard movement to the present: prose, poetry, and/or drama. May be repeated for credit when topics vary.

5803 Mexican American Literature

(3-0) 3 hours credit.

The consideration of Mexican American literature in the context of the Hispanic tradition. Different genres, themes, and authors will be examined in terms of ethnic, social, and linguistic characteristics as well as artistic merit. May be repeated for credit when topics vary.

5813 Studies in Hispanic Literature

(3-0) 3 hours credit.

Study in selected areas of Hispanic literature not normally available as part of regular course offerings. May be repeated for credit when topics vary.

5843 History of the Spanish Language

(3-0) 3 hours credit.

Chronological development of the Spanish language. Phonological, morphosyntactic, and lexical change from the preromance period to the present.

- 5853 Spanish of the Southwest**
(3-0) 3 hours credit.
An in-depth study of the popular variety of Spanish spoken by Mexican Americans in the U.S. Southwest, including San Antonio. Complementary descriptive and sociolinguistic approaches are incorporated.
- 5863 Spanish Phonetics and Phonology**
(3-0) 3 hours credit.
The framework of articulatory phonetics and its application to the description of Spanish. Analysis of the sound system of Spanish in both traditional and contemporary phonological frameworks, with attention given to regional variation.
- 5883 Spanish Morphology and Syntax**
(3-0) 3 hours credit.
An introduction to the grammatical description of the Spanish language, focusing on the levels of word, phrase, sentence, and discourse. Consideration is given to variability across language modalities (e.g., oral vs. written) and varieties (e.g., standard vs. popular).
- 5893 Hispanic Dialectology**
(3-0) 3 hours credit.
A study of regional and social variation in Peninsular, Latin American, and U.S. Spanish, including phonology, grammar, and lexicon of popular spoken dialects. Perspectives of traditional dialectology and modern sociolinguistics.
- 5903 Studies in Hispanic Linguistics**
(3-0) 3 hours credit.
Study in selected areas of Hispanic linguistics not normally available as part of regular course offerings. May be repeated for credit when topics vary.
- 5953 A Functional-Notional Approach to Contemporary Hispanic Culture**
(3-0) 3 hours credit.
Identification of the segments of contemporary Spanish pertinent to the major functions or purposes of language use in a given part of the Spanish-speaking world. Identification of the extended vocabulary clusters or notions pertinent to major topics or situations in contemporary life in a given part of the Spanish-speaking world. Relation of these elements to approaches to speaking, listening, reading, and writing. May be repeated for credit when topics vary, but not more than 6 hours will apply to the Master of Arts degree in Spanish.
- 6813 Seminar in Hispanic Studies**
(3-0) 3 hours credit. Prerequisite: 18 semester credit hours of graduate-level Spanish.
In-depth study and major research project in topics such as Hispanic culture, literature, and/or language. May be repeated for credit when topics vary.

6951-3 Independent Study

1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the Graduate Advisor of Record.

Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the Master of Arts degree in Spanish.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the appropriate graduate studies committee to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination). Credit earned in SPN 6961 may not be counted in the 36 hours required for the Master of Arts degree in Spanish.

6973,6 Special Problems

(3-0), (6-0) 3 or 6 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. May be repeated for credit when the topics vary, but not more than 6 hours, regardless of discipline, will apply to the Master of Arts degree in Spanish.

6983 Master's Thesis

3 hours credit. Prerequisite: Permission of the Graduate Advisor of Record and thesis director.

Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the Master of Arts degree in Spanish. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

**COURSE DESCRIPTIONS
FOREIGN LANGUAGES
(FL)**

5003 Foreign Language Studies I

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

Consideration of foreign language instruction research and practice regarding facilitation of speaking, listening, reading, and writing, with consideration of vocabulary extension and treatment of accuracy. Special emphasis on Spanish, French, and German.

5013 Foreign Language Testing

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

Consideration of content and approaches for testing achievement and proficiency, at the various levels, in listening, speaking, reading, writing, vocabulary, structure, and culture in the foreign languages. Special emphasis on Spanish, French, or German.

5023 Foreign Language Studies II

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

Consideration of foreign language instruction research and practice regarding special areas for integration such as video, audio, computer, literature, composition, culture-authentic materials, and/or higher-order thinking-skills materials. Special emphasis on Spanish, French, or German. May be repeated for credit when topics vary.

5033 Foreign Languages and Intercultural Communication

(3-0) 3 hours credit.

Investigation of intercultural communication research in specific language communities and its application to effective interaction with speakers of a variety of foreign languages. Consideration of sociolinguistic norms, semantic variation, and nonverbal language relevant to selected foreign language communities in the United States and abroad compared with mainstream U.S. English norms.

5043 Principles of Translation

(3-0) 3 hours credit. Prerequisites: Previous coursework or experience in translation or consent of instructor.

A survey of approaches to translation, practice and theory, with hands-on experience in a variety of genres (for example, literary prose, poetry, essay, narration) and vocabularies (e.g., legal, medical, business, etc.). May be repeated when languages vary, i.e., Spanish/English, French/English, or German/English.

COURSE DESCRIPTIONS

FRENCH

(FRN)

5813 Topics in French Linguistics

(3-0) 3 hours credit. Prerequisites: Consent of instructor.

A course focusing on a selected area of French linguistics, such as grammar, stylistics, phonetics, or applied linguistics. May be repeated for credit when topics vary.

5913 Topics in French Literature and Culture

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

A course focusing on a selected period or aspect of French literature and culture, such as contemporary France, the nineteenth-century novel and society, or twentieth-century theater. May be repeated for credit when topics vary.

COURSE DESCRIPTIONS GERMAN (GER)

- 5813 Topics in German Linguistics**
(3-0) 3 hours credit. Prerequisites: Consent of instructor.
A course focusing on a selected area of German linguistics, such as grammar, stylistics, phonetics, or applied linguistics. May be repeated for credit when topics vary.
- 5913 Topics in German Literature and Culture**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Selected topics relative to German literature and culture, including such areas as contemporary Germany and profiles of particular segments of German society. May be repeated for credit when topics vary.

COURSE DESCRIPTIONS LINGUISTICS (LNG)

- 5013 Sociolinguistics**
(3-0) 3 hours credit. Prerequisite: LNG 3813, an equivalent, or consent of instructor.
Theory, research, and methods for the study of linguistic variation and language use in context. Quantitative and qualitative approaches are included.
- 5153 Topics in Contemporary Linguistics**
(3-0) 3 hours credit. Prerequisite: LNG 3813, an equivalent, or consent of instructor.
Contemporary approaches to language analysis and description. May be repeated for credit when topics vary.

DIVISION OF MUSIC

Master of Music Degree

The Master of Music degree program in the Division of Music is accredited by the National Association of Schools of Music.

The Master of Music degree offers the opportunity for advanced study for qualified students who wish to emphasize music performance, conducting, or music education. The Music Performance Emphasis offers specialized curricular tracks in instrumental and vocal performance. The Conducting Emphasis offers specialized curricular tracks in instrumental and choral conducting. The Music Education Emphasis offers specialized curricular tracks in instrumental music education, choral music education, general music education, and piano pedagogy.

Program Admission Requirements. In addition to satisfying the University-wide admission requirements, applicants are expected to hold the Bachelor of Music degree or Bachelor of Music Education degree with a major in their intended area of graduate emphasis, or the equivalent; submit three recommendations from established professionals commenting on the appropriateness of graduate study in music for the applicant; and complete one of the following:

Music Performance: Audition in person or provide a recent tape demonstrating the level of mastery in the proposed performance medium.

Conducting: Audition in person or provide a recent videotape demonstrating the level of mastery in a rehearsal or performance situation.

Music Education: Music Education Entrance Examination.

Students are required to take advisory examinations in music theory and music history before taking courses or during the first semester as a degree-seeking student. The student's advisor will counsel the student in correcting deficiencies and selecting courses for the student's degree program.

Degree Requirements. Two options are available in the Music Education Emphasis. Option I consists of 24 semester credit hours of coursework and a thesis, for which 6 semester credit hours are given. Option II consists of 36 semester credit hours, including a project for which 3 semester credit hours are given.

Courses in which a grade of "C" or lower is earned will not count toward the minimum number of hours required for the Master of Music degree.

Students selecting the Music Performance Emphasis are required to complete 30 semester credit hours, including 1 semester credit hour for a recital. Voice principals must take diagnostic examinations in French, German, Italian, and English lyric diction. If the student is not found proficient in any one of the languages, the appropriate course will be required.

Conducting Emphasis

Candidates for the Master of Music degree with an emphasis in Conducting must complete

A. 9 semester credit hours in the area of emphasis as follows:

MUS	5554	Music Performance—Performance Emphasis (two semesters)
MUS	6941	Recital

B. 15 semester credit hours of music electives (approved by advisor) to include the areas of theory and analysis, history and literature, research, pedagogy, and performance. 6 hours of these music electives must be satisfied by the completion of MUS 5223 Ensemble Repertoire and MUS 5523 Rehearsal Techniques.

C. 6 semester credit hours of electives (approved by advisor), of which no more than 2 hours may be in a music ensemble.

Music Performance Emphasis

Candidates for the Master of Music degree with an emphasis in Music Performance must complete

A. 9 semester credit hours in the area of emphasis as follows:

MUS	5554	Music Performance—Performance Emphasis (two semesters)
MUS	6941	Recital

B. 15 semester credit hours of music electives (approved by advisor) to include the areas of theory and analysis, history and literature, research, pedagogy, and performance

C. 6 semester credit hours of electives (approved by advisor), of which no more than 2 semester credit hours may be in a music ensemble

Music Education Emphasis

Candidates for the Master of Music degree with an emphasis in Music Education must complete

A. 9 semester credit hours in the area of emphasis as follows:

MUS	5403	Psychological Foundations of Music Education
MUS	5413	Research in Music Education
MUS	6423	Seminar in Music Education

B. *Option I* (with thesis). The satisfactory completion of MUS 6983 Master's Thesis (6 semester credit hours) in accordance with University regulations as stated under Options for Master's Degrees.

Option II (with project). The satisfactory completion of MUS 6913 Project in Music Education.

- C. *Option I* (with thesis). 15 semester credit hours of electives (approved by advisor) to include the areas of theory and analysis, history and literature, and performance (no more than 2 semester credit hours may be in a music ensemble). The remaining hours of electives are to be taken in the area of specialization (instrumental music education, choral music education, general music education, or piano pedagogy) and must be approved by the advisor.

Option II (with project). 24 semester credit hours of electives (approved by advisor) to include the areas of theory and analysis, history and literature, research, and performance (no more than 2 semester credit hours may be in a music ensemble). The remaining hours of electives are to be taken in the area of specialization (instrumental music education, choral music education, general music education, or piano pedagogy) and must be approved by the advisor.

Special Degree Requirements. Students selecting the Music Performance Emphasis are required to participate for two semesters in an ensemble appropriate to their program of study.

Students selecting the Music Performance Emphasis or Conducting Emphasis will complete a recital document and oral examination. Students selecting the Music Education Emphasis will complete written and oral examinations.

COURSE DESCRIPTIONS

MUSIC (MUS)

- 5103 Applied Systems of Analysis**
(3-0) 3 hours credit. Required of all students for a Master of Music degree. A study of techniques designed to assist the conductor-performer-analyst in a better understanding of music through the application of different analytical systems, with an emphasis on the Schenker-Salzer Systems of Analysis.
- 5223 Ensemble Repertoire**
(3-0) 3 hours credit. Prerequisite: Graduate standing in music. A study of repertoire for ensembles including a historical perspective. Section 1, Choral; Section 2, Instrumental. May be repeated for credit.
- 5233 Introduction to Music Research**
(3-0) 3 hours credit. Prerequisite: Graduate standing in music. A survey of references and sources consulted in graduate music courses; format for papers and thesis, including footnotes and bibliography. Research methods in music are explored.
- 5263 Topics in Music History**
(3-0) 3 hours credit. Prerequisite: Graduate standing in music. A study of works and styles appropriate to the topics listed below. Topics are (1) Middle Ages; (2) Renaissance; (3) Baroque Period; (4) Classic Period;

(5) Romantic Period; (6) Twentieth Century; and (7) Music Practices and Styles. May be repeated for credit when topics vary. Topics may be taken concurrently.

5403 Psychological Foundations of Music Education

(3-0) 3 hours credit. Prerequisite: Graduate standing in music.

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.

5413 Research in Music Education

(3-0) 3 hours credit. Prerequisite: Graduate standing in music.

An introduction to historical, philosophical, descriptive, and experimental research in music education. Students will conduct a research study and prepare a final report.

5433 Performance Repertoire

(3-0) 3 hours credit. Prerequisite: Graduate standing in music.

A study of the solo, chamber, and orchestral repertoire. Piano principals must repeat for credit.

5511 Secondary Performance

1 hour credit.

Private instruction for graduate students desiring secondary study in the following areas: baritone, bassoon, clarinet, classical guitar, conducting, contrabass, cornet, flute, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, and voice. Seminar attendance may be required. May be repeated for credit.

5523 Rehearsal Techniques

(3-0) 3 hours credit. Prerequisite: Graduate standing in music.

A study of rehearsal techniques, including tone development, phrasing, rehearsal score study, style, and rehearsal organization. Topics are (1) Choral; (2) Instrumental. May be repeated for credit when topics vary. Topics may be taken concurrently.

5533 Pedagogy of Musical Performance

(3-0) 3 hours credit. Prerequisite: Graduate standing in music.

Techniques and materials of teaching musical performance to the college-level student. A critical comparison of existing materials is included. Each student is required to demonstrate teaching techniques.

5542 Music Performance

2 hours credit.

Private instruction in baritone, bassoon, clarinet, classical guitar, conducting, contrabass, cornet, flute, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Seminar attendance may be required. May be repeated for credit.

- 5554 Music Performance–Performance Emphasis**
 4 hours credit. Prerequisite: Graduate standing in music and successful audition.
 Private instruction for graduate students with emphasis in performance or conducting. Instruction offered in baritone, bassoon, clarinet, classical guitar, conducting, contrabass, cornet, flute, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Seminar attendance may be required. May be repeated for credit.
- 5572 Class Piano Practicum**
 (2-0) 2 hours credit. Prerequisite: Graduate standing in music.
 A study of pedagogical techniques and materials used in teaching class piano. Students will have an opportunity to tutor individual students under the supervision of the instructor.
- 5583 Advanced Instrumental Techniques**
 (3-0) 3 hours credit. Prerequisite: Graduate standing in music.
 A study of advanced playing and teaching techniques, selection of materials, and maintenance care. Topics are (1) Winds and Percussion; (2) Strings. Designed primarily for instrumental music teachers.
- 5593 Elementary Music**
 (3-0) 3 hours credit. Prerequisite: Graduate standing in music.
 A study of the current methods and materials used in teaching elementary music. Classroom instruments are also studied.
- 5711 Graduate Ensemble**
 (0-3) 1 hour credit.
 The study of selected ensemble works through participation in rehearsal and performance. May be repeated for credit.
- 6233 Twentieth-Century Analytical Techniques**
 (3-0) 3 hours credit. Prerequisite: Graduate standing in music.
 Applied analysis of contemporary music using techniques designed to aid the performer and music educator in a fuller understanding of the music of our century. Interpretation of new notation and specific performance techniques for both solo and ensemble are emphasized.
- 6313 The Use of Microcomputers in Music Education**
 (3-0) 3 hours credit. Prerequisite: Graduate standing in music.
 A study of the role of microcomputers in music education. Students are given the opportunity to learn basic programming techniques with specific applications to music instruction. Currently available software and hardware applicable to music instruction are examined.
- 6353 Multimedia Production**
 (3-0) 3 hours credit.
 Provides instruction on the development of computer-aided presentations and interactive applications that integrate various media including music, narration, sound, text, and graphics. Students use current multimedia

development and presentation packages to apply concepts of effective production management, audiovisual design, and educational psychology. Supplementary instruction includes scanning, digital audio/video manipulation, and graphics creation. Projects are individualized to reflect each student's chosen discipline.

6423 Seminar in Music Education

(3-0) 3 hours credit.

Studies in the philosophy, historical background, and current trends in music education.

6543 Diction for Singers

(3-0) 3 hours credit. Prerequisite: Graduate standing in music.

A study of performance diction for singers. 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.

6913 Project in Music Education

(3-0) 3 hours credit. Prerequisites: Permission of the Graduate Advisor of Record and project director.

Offers the opportunity to complete a professional project in music education relevant to the student's background, interests, 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.

6941 Recital

1 hour credit. Prerequisites: Permission of the Graduate Advisor of Record and music performance instructor. Concurrent registration required in MUS 5554.

A recital approximately one hour in length; required of all students in the performance or conducting emphasis.

6951-3 Independent Study

1 to 3 hours credit. Prerequisites: Permission in writing (form available) of the instructor and the Graduate Advisor of Record.

Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours will apply to the Master of Music degree.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the appropriate graduate studies committee to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken

that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination). Credit earned in MUS 6961 may not be counted in the total hours required for the Master of Music degree.

6971-3 Special Problems

1 to 3 hours credit. Prerequisite: Consent of instructor.

Offers the opportunity for specialized study not normally or not often available as part of the regular course offerings. May be repeated for credit when topics vary, but not more than 6 hours, regardless of discipline, will apply to the Master of Music degree.

6983 Master's Thesis

3 hours credit. Prerequisites: Permission of the Graduate Advisor of Record and thesis director.

Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the Master of Music degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

DIVISION OF VISUAL ARTS

Master of Fine Arts Degree

The Master of Fine Arts degree is the terminal degree in the field of studio art. UTSA is an accredited institutional member of the National Association of Schools of Art and Design. The emphasis of the M.F.A. program is on conceptual development and its harmony with formal aesthetic and art historical considerations. The objective of the degree is to provide advanced study in the field of art in preparation for a career as a practicing artist, in higher education, or as a professional in other art enterprises.

Program Admission Requirements. In addition to satisfying the University-wide graduate admission requirements, applicants are expected to have a Bachelor of Fine Arts degree or a Bachelor of Arts degree with a major in art or the equivalent. As part of their undergraduate degree, students must have completed a minimum of 45 semester credit hours in studio art and 15 semester credit hours in art history.

Application Materials. In addition to filing the regular University application for admission, all applicants must submit to the Division of Visual Arts for evaluation 20 slides (35mm) of their most current work, a statement describing the objectives of proposed graduate study, three letters of recommendation, and unofficial copies of transcripts from all college-level coursework that included art and art history classes. Interested individuals should contact the Graduate Art Advisor at (210) 458-4352 to request an application packet.

Application Materials Deadline. The slides, statement, letters of recommendation, and unofficial transcripts are to be sent to the Graduate Art Advisor in the Division of Visual Arts.

For Fall Semester enrollment: April 1

For Spring Semester enrollment: November 1

Notification: Although admission is not official until the Office of Graduate Studies sends notification, the Division Office will ordinarily notify the applicant of the art faculty's recommendation regarding admission into the M.F.A. program by May 1 (for fall application) or by December 1 (for spring application). Applicants should notify the Graduate Advisor of their decision to enroll by May 15 and December 15 respectively.

Note: Due to the format of studio laboratory art courses, auditing is not permitted.

Degree Requirements. A minimum of 60 semester credit hours is required for the Master of Fine Arts degree, exclusive of coursework or other study required to remove admission deficiencies. Full-time enrollment of 9 or more semester credit hours during regular semesters is expected of degree-seeking students. In addition to satisfying all University-wide requirements, M.F.A. students must pass the first semester review of their progress for continuation in the M.F.A. program. Other qualifying examinations may be required. Courses in which a grade of "C" or lower is earned will not count toward the minimum 60 hours required for the M.F.A. degree.

Candidates for the degree must complete the following:

Major field (ceramics, drawing, painting, photography, printmaking, or sculpture) and Graduate Studio Seminar	30 hours
Art electives outside the major area	12 hours
Free elective	3 hours
Art history and criticism including AHC 5123	12 hours
ART 6843 Master of Fine Arts Exhibition	3 hours

COURSE DESCRIPTIONS

ART (ART)

5153 **Painting**

(0-6) 3 hours credit. Prerequisite: B.F.A. or equivalent.

The exploration of painting's broad capacity for conceptual and formal inquiry. May be repeated for credit.

5253 **Drawing**

(0-6) 3 hours credit. Prerequisite: B.F.A. or equivalent.

Drawing joins knowledge and imagination with the investigation of materials, ideas, and imagery. May be repeated for credit.

5353 **Printmaking**

(0-6) 3 hours credit. Prerequisite: B.F.A. or equivalent.

Emphasis on intaglio, lithography, monotype, relief, and photo processes in black and white and color. Experimentation in processes and imagery is encouraged. May be repeated for credit.

5453 **Photography**

(0-6) 3 hours credit. Prerequisite: B.F.A. or equivalent.

Emphasis on the medium as an art form, including black and white, color, and nonsilver processes. May be repeated for credit.

5553 **Sculpture**

(0-6) 3 hours credit. Prerequisite: B.F.A. or equivalent.

Emphasis on the creative development of sculptural ideas in a variety of materials and technical methods and approaches. May be repeated for credit.

5753 **Ceramics**

(0-6) 3 hours credit. Prerequisite: B.F.A. or equivalent.

Emphasis on the discipline as an expressive art form, using a variety of technical processes and materials and approaches to ceramics. May be repeated for credit.

6013 **Practicum in the Visual Arts**

3 hours credit. Prerequisite: Consent of instructor.

Students participate in projects on an individual basis. These may include community-oriented activities such as workshops for community centers, special art programs for public or private educational organizations, service

projects for displays, murals and exhibitions for special environments, or supervised assistance in instructional activities. The instructor supervises and evaluates the student's activities. May be repeated once for credit.

6023 Graduate Studio Seminar

(0-6) 3 hours credit. Prerequisite: Graduate standing.

An organized class concerned with the exploration of current formal and conceptual problems in art through discussions, critiques, and work executed for the class in the student's major field: painting, drawing, printmaking, sculpture, photography, or ceramics. May be repeated for credit, but no more than 15 semester credit hours may be applied toward degree requirements.

6843 Master of Fine Arts Exhibition

3 hours credit. Prerequisite: Completion of studio course requirements in the major.

Concentrated studio activity in the major field of study emphasizing preparation of work for the concluding exhibition, in consultation with the Graduate Advisor of Record and upon approval of the Graduate Studies Committee in the program. Enrollment in this course is required each term in which the exhibition is in progress.

6953 Independent Study

3 hours credit. Prerequisite: Graduate standing and permission in writing (form available) of the instructor and the Graduate Advisor of Record.

Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students desiring specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the Master of Fine Arts degree.

6973 Special Problems

(0-6) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. May be repeated for credit when the topics vary, but not more than 6 hours, regardless of discipline, will apply to the Master of Fine Arts degree.

Master of Arts Degree in Art History

The Master of Arts degree in Art History offers the opportunity for advanced study in art history, with an emphasis on Spanish, pre-Columbian, Latin American Colonial to Modern, and contemporary Hispanic art in the United States; contemporary U.S. art and criticism; and the cultural and artistic traditions of San Antonio's immediate region. The degree is designed to prepare the student for a career as a teacher of art history at the junior college level and other arts-related professions or to serve as a basis for entering doctoral studies elsewhere.

Program Admission Requirements. In addition to the University-wide graduate admission requirements, applicants are expected to have completed an undergraduate major (24 hours) in art history or the equivalent in related fields that combine substantial studies in the humanities and visual arts.

Application Materials. Each applicant must provide at least one example of scholarly writing, a written statement of purpose, and three letters of recommendation from persons who can evaluate the applicant's academic record, skills, motivation, and potential. In addition, the applicant must submit scores from the Graduate Record Examination (GRE). These scores will be used as one element in the evaluation of the applicant. Contact the Division Office at (210) 458-4352 to receive an information packet and the necessary forms.

Application Materials Deadlines. The writing example, statement, letters of recommendation, and GRE scores should be sent directly to the Graduate Advisor in the Division of Visual Arts by the University's admission deadlines. Earlier application, however, will result in a more thorough evaluation.

Degree Requirements. The minimum number of semester credit hours required for this degree, exclusive of coursework or other study required to remove admission deficiencies, is 36. In addition, students are required to pass a language examination demonstrating a reading knowledge of a foreign language. In most cases, this will be Spanish. The suitability of another language will be determined by the student's advisor. This test should be completed before the student earns 18 hours of graduate work in this program. Courses in which a grade of "C" or lower is earned will not count toward the minimum 36 hours required for the Master of Arts degree in Art History.

Candidates for the degree must complete the following:

A. 3 to 6 semester credit hours of required courses:

AHC	5123	Seminar in Research Methods and Writing (must be taken in student's first year)
ART	5000–6000	Students with no studio background will be required to take one studio art course as part of their electives

B. 18 to 21 semester credit hours of art history electives approved by the student's advisor, distributed across the disciplines offered by the program:

AHC	5813	Topics in Art History
AHC	5823	Topics in Mesoamerican Pre-Columbian Art
AHC	5833	Topics in Spanish Art
AHC	5843	Topics in Latin American Colonial Art
AHC	5853	Topics in Contemporary Latin American Art
AHC	5863	Topics in Contemporary U.S. Art
AHC	5883	Computer Applications for the Art Historian
AHC	6813	Practicum in Art History
AHC	6833	Art Gallery and Museum Practices
AHC	6843	Project in Art History
AHC	6913	Seminar in Art History

C. 6 semester credit hours of free electives. These are courses outside the discipline of art history in the supporting fields of Spanish, history, anthropology, or studio art (as approved by the Art History Advisor)

D. 6 semester credit hours of AHC 6983 Master's Thesis

In addition to the semester-credit-hour requirements set forth above, all candidates for the degree are required to pass the Comprehensive Examination, a slide and essay examination designed to test students' knowledge of the history of European art, art of the Americas, and areas of concentration. The Comprehensive Examination is normally taken during or immediately after the semester in which the student completes his or her coursework and before completion of the thesis.

COURSE DESCRIPTIONS ART HISTORY AND CRITICISM (AHC)

- 5123 Seminar in Research Methods and Writing**
(3-0) 3 hours credit. Prerequisite: Graduate standing.
A basic methodology course designed to offer the opportunity for the graduate student to gain an introduction to all facets of the discipline of art history and criticism, including research, documentation, and historical and critical writing.
- 5813 Topics in Art History**
(3-0) 3 hours credit. Prerequisites: Graduate standing and completion of or concurrent enrollment in AHC 5123.
A course designed to deal with specialized areas in art history. May be repeated for credit when topics vary.
- 5823 Topics in Mesoamerican Pre-Columbian Art**
(3-0) 3 hours credit. Prerequisites: Graduate standing and completion of or concurrent enrollment in AHC 5123.
A study of specific developments in the pre-Columbian art of Mesoamerica. May be repeated for credit when topics vary.
- 5833 Topics in Spanish Art**
(3-0) 3 hours credit. Prerequisites: Graduate standing and completion of or concurrent enrollment in AHC 5123.
A study of specific aspects of Spanish art and architecture, from 711 to the nineteenth century. May be repeated for credit when topics vary.
- 5843 Topics in Latin American Colonial Art**
(3-0) 3 hours credit. Prerequisites: Graduate standing and completion of or concurrent enrollment in AHC 5123.
A study of specific topics in South and Central American art and architecture from 1500 through the early nineteenth century. May be repeated for credit when topics vary.
- 5853 Topics in Contemporary Latin American Art**
(3-0) 3 hours credit. Prerequisites: Graduate standing and completion of or concurrent enrollment in AHC 5123.
A study of issues in contemporary Latin American art. May be repeated for credit when topics vary.

- 5863 Topics in Contemporary U.S. Art**
(3-0) 3 hours credit. Prerequisites: Graduate standing and completion of or concurrent enrollment in AHC 5123.
Specific directions in modern and contemporary art history, with emphasis on critical theory. May be repeated for credit when topics vary.
- 5883 Computer Applications for the Art Historian**
(3-0) 3 hours credit. Prerequisite: Graduate standing.
Introduction to the diverse applications of the computer to the discipline of art history, including information management; the design and use of databases for personal research; the use of extant databases and other electronic information for research and bibliographies; image and graphic hardware and software; and utilization and downloading of images and information from the Internet.
- 6813 Practicum in Art History and Criticism**
3 hours credit. Prerequisites: Graduate standing, consent of instructor, and completion of or concurrent enrollment in AHC 5123.
A learning laboratory in which the principles and methodologies of art history, art criticism, and museology are applied in a practical manner outside the classroom in areas such as museum and gallery activities, historical preservation, research for private collections, and community-oriented educational or information functions and publications. Projects are initiated by students, with close supervision and evaluation by the instructor. May be repeated for credit, but not more than 6 hours will apply to the Master of Arts degree in Art History.
- 6833 Art Gallery and Museum Practices**
3 hours credit. Prerequisites: Graduate standing, consent of instructor, and completion of or concurrent enrollment in AHC 5123.
An introduction to the organization and operation of gallery and/or museum activities: cataloging, research, and preparation and installation of art exhibitions.
- 6843 Project in Art History**
3 hours credit. Prerequisite: Permission of the Graduate Advisor and project director.
A professional project in art history. Projects include but are not limited to historic preservation, publications, and exhibition curation. May be repeated for credit, but not more than 6 hours will apply to the Master of Arts degree in Art History.
- 6913 Seminar in Art History**
(3-0) 3 hours credit. Prerequisites: Graduate standing and completion of or concurrent enrollment in AHC 5123.
A research course dealing with a particular problem or aspect of art history. Topics include but are not limited to Mayan vase painting, the Hispanic *retablo*, Francisco Goya, images of women in Latin American colonial art, Frida Kahlo, Marcel Duchamp, and contemporary Latino painters. May be repeated for credit when topics vary.

6953 Independent Study

3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the Graduate Advisor of Record.

Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the Master of Arts Degree in Art History.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the appropriate graduate studies committee to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination). Credit earned in AHC 6961 may not be counted in the 36 hours required for the Master of Arts degree in Art History.

6983 Master's Thesis

3 hours credit. Prerequisites: Permission of the Graduate Advisor and thesis director.

Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the Master of Arts degree in Art History. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

**COLLEGE OF SCIENCES
AND ENGINEERING**



COLLEGE OF SCIENCES AND ENGINEERING

DIVISION OF COMPUTER SCIENCE

Master of Science Degree in Computer Science

The Master of Science degree program in Computer Science offers integrated studies involving software and hardware. A thesis option is available for students who wish to have research experience.

Program Admission Requirements. In addition to satisfying the University-wide graduate admission requirements, a B.A. or B.S. in Computer Science equivalent to that offered by UTSA is required. Students who do not qualify for unconditional admission may be admitted on a conditional basis. Students who are admitted on a conditional basis may be required to complete specific undergraduate courses as conditions of admission. If such courses are listed as deficiencies, they will not count toward the graduate degree. In such cases, students should anticipate that additional time will be required to complete the degree. Applicants are required to submit scores from the Graduate Record Examination (GRE).

Degree Requirements. Candidates for the degree are required to successfully complete 36 semester credit hours of graduate coursework.

A. The following four courses (12 hours) are required of all students:

CS	5513	Computer Architecture
CS	5523	Operating Systems
CS	5633	Analysis of Algorithms
CS	5363	Programming Languages and Compilers

- B. Students must complete at least 18 semester credit hours of additional eligible graduate courses, 12 hours of which must be in the Division of Computer Science. With prior approval of the Graduate Advisor of Record, students may apply a maximum of 6 hours of graduate courses from other disciplines to the degree.
- C. Students must either write a master's thesis and enroll in 6 semester credit hours of CS 6983 or complete 6 hours of additional graduate coursework in the Division of Computer Science.
- D. Candidates must either successfully defend thesis research results in an oral defense or give a public lecture followed by an oral examination on a topic approved by the Graduate Studies Committee.

Doctor of Philosophy Degree in Computer Science

The Division of Computer Science offers advanced coursework and research leading to the Doctor of Philosophy degree in Computer Science. The program emphasizes high-performance computing. Successful Ph.D. candidates must demonstrate an in-

depth knowledge of computer science and must deliver an original contribution to the field.

The regulations for this degree comply with the general University regulations (refer to chapter 5, General Academic Regulations, and chapter 7, Doctoral Degree Regulations).

Admission Requirements. The minimum requirements for admission to the doctoral degree program in computer science are as follows:

1. A B.A., B.S., or M.S. degree in computer science or related area.
2. A cumulative grade-point average of 3.30 or higher in the last 60 hours of coursework.
3. A score of at least 1500 on the GRE general test (verbal, math, and analytical sections); exceptions can be made in cases with a strong justification, such as a high grade-point average and/or extensive research. The GRE computer science subject test is strongly recommended but not required.
4. A TOEFL score of at least 550 for applicants whose native language is not English and who have not graduated from a U.S. institution.
5. Three letters of recommendation attesting to the applicant's readiness for doctoral study.

Admission is competitive. Satisfying the minimum requirements does not guarantee admission. An application should also include a resumé and a statement of research experience and interest.

Students who apply will automatically be considered for one of a small number of doctoral student stipends. Some teaching and research assistantships are also available.

Course Requirements. Course requirements for the doctoral degree program in computer science are as follows:

A. Core courses (18 semester credit hours):

CS	5513	Computer Architecture
CS	5523	Operating Systems
CS	5633	Analysis of Algorithms
CS	6553	Performance Evaluation
CS	6643	Parallel Processing
CS	6653	Parallel Algorithms

B. Designated electives (12 semester credit hours in a single focus):

1. High-Performance Programming Environments Focus:

CS	5113	Computer Graphics
CS	5363	Programming Languages and Compilers

Plus two courses from the following:

CS	6113	Program Visualization and Monitoring
CS	6363	Advanced Compiler Construction
CS	6513	Advanced Computer Architecture

CS	6523	Distributed Operating Systems
CS	6543	Networks
CS	6593	Advanced Topics in Distributed Systems

2. High-Performance Computational Techniques Focus:

CS	5603	Numerical Analysis
CS	6613	Parallel Numerical Methods and Software

Plus two courses from the following:

CS	6103	Distributed Software Development
CS	6243	Machine Learning
CS	6253	Topics in Neural Networks
CS	6693	Advanced Topics in Application Development
CS	6723	Image Processing

C. Free electives. 9 semester credit hours selected from computer science and related areas with approval of the Graduate Advisor.

D. Computer science research (30 semester credit hours):

CS	7123	Research Seminar (6 hours)
CS	7211-3	Doctoral Research (12 hours)
CS	7311-3	Doctoral Dissertation (12 hours)

Applicants with a M.S. in Computer Science from another college or university may apply a maximum of 12 hours of previously earned graduate credits toward their doctoral degree. Each student's transcript will be evaluated by the Doctoral Studies Committee, and credit will be designated on a course-by-course basis to satisfy the formal coursework requirements of the degree.

Advancement to Candidacy. Students seeking a doctoral degree must be admitted to candidacy. One of the requirements for admission to candidacy is passing a doctoral qualifying examination. Students should consult the University's Doctoral Degree Regulations for other requirements.

Qualifying Exam. The qualifying examination is divided into written and oral portions.

Written Portion. The written portion of the doctoral qualifying examination (written exam) is scheduled at the beginning of the Fall and Spring Semesters. Full-time doctoral students must take the written exam by the beginning of their third semester. Normally, the written exam is taken at the start of the student's second year at the beginning of the Fall Semester. Students who fail their first attempt at the written exam are allowed to make a second attempt on the next written exam. No more than two attempts to pass the written exam are permitted.

Oral Portion. After the student has completed the coursework in his or her proposed program of study (core courses, designated electives, and free electives), the next step is the oral portion of the qualifying examination. The oral exam is conducted by a faculty committee, which is chaired by the student's program advisor. The oral exam consists of a presentation of the student's dissertation proposal followed by a

period of questioning based on the dissertation proposal and the student's proposed program of study. Unanimous approval of the examination committee is required to pass the oral exam. No more than two attempts to pass the oral exam will be permitted. The oral exam must be taken within one year after completion of all coursework.

Doctoral Dissertation and Final Oral Examination. After passing the qualifying examination, the next steps are writing a dissertation and passing the final oral examination. The final oral examination is administered and evaluated by the student's dissertation committee and covers the dissertation and the general field of the dissertation. The final oral examination consists of an open presentation of the dissertation followed by a closed oral examination. Unanimous approval of the Dissertation Committee is required to pass the final oral examination. Also, the written dissertation must be unanimously approved by the Dissertation Committee.

COURSE DESCRIPTIONS COMPUTER SCIENCE (CS)

5003 Computer Literacy

(3-0) 3 hours credit.

This course is designed for educators who need a basic computer course so that intelligent decisions may be made concerning the issues of computers in the classroom. Students have the opportunity to learn the vocabulary, workings, and capabilities of the computer and programming in BASIC and Pascal languages. May not be applied toward the Master of Science degree or Doctor of Philosophy degree in Computer Science.

5023 Computers for Teachers

(3-0) 3 hours credit.

A course for mathematics teachers on integrating the computer into the mathematics curriculum, with an algorithmic-oriented introduction to computer programming in BASIC and Pascal. This course can only be applied to the Master of Science degree in Mathematics with a concentration in Mathematics Education. (Same as MAT 5013. Credit cannot be earned for both MAT 5013 and CS 5023.)

5103 Software Engineering

(3-0) 3 hours credit. Prerequisites: CS 2734 and 3343.

Discussion of issues relevant to the development of large software systems, such as specification, design and synthesis of reliable software, proof of correctness, self-checking software, reconfiguration, recovery, fault-tolerant systems, and system reliability modeling.

5113 Computer Graphics

(3-0) 3 hours credit. Prerequisites: CS 3343 and MAT 2233.

The course emphasizes generative computer graphics, interactive construction of graphic objects, data base design, composite object construction, and hidden-surface algorithmic techniques. Emphasis is on vector graphic devices and on the production of high-resolution images.

- 5233 Artificial Intelligence**
(3-0) 3 hours credit. Prerequisite: CS 3323 and 3343.
This course covers artificial intelligence from the standpoint of general problem-solving techniques. Major topics include search, knowledge representation, planning, machine learning, and natural language processing. Programming projects are in LISP.
- 5253 Expert Systems**
(3-0) 3 hours credit. Prerequisite: CS 5233.
This course presents an in-depth study of the area of artificial intelligence known as expert systems. Example expert systems are examined as a means of identifying the generally accepted methodologies for developing such systems as well as the basic research issues involved.
- 5293 Numerical Linear Algebra**
(3-0) 3 hours credit. Prerequisite: MAT 3633 or an equivalent.
Direct and iterative methods for solving general linear systems, the algebraic eigenvalue problem, least square problems, and solutions of sparse systems arising from partial differential equations. (Same as MAT 5293. Credit cannot be earned for both CS 5293 and MAT 5293.)
- 5353 Formal Languages, Automata, and Theory of Computation**
(3-0) 3 hours credit. Prerequisites: CS 3343 and 3233.
Formal models of computation and syntax.
- 5363 Programming Languages and Compilers**
(3-0) 3 hours credit. Prerequisite: CS 3343 and 3233.
A study of modern programming languages with emphasis on their implementation. Topics include scanning, parsing, syntax-directed translation, code generation, and optimization. (Formerly CS 5303. Credit cannot be earned for both CS 5363 and CS 5303.)
- 5443 Data Base Management**
(3-0) 3 hours credit. Prerequisites: CS 3233 and 3743.
Design and implementation of techniques for information retrieval in data base management systems.
- 5513 Computer Architecture**
(3-0) 3 hours credit. Prerequisites: CS 3733 and 4753.
Study of modern computer architecture, including parallel computers, multiprocessors, pipelines, and fault tolerance.
- 5523 Operating Systems**
(3-0) 3 hours credit. Prerequisite: CS 5513.
Operating systems concepts with an emphasis on concurrency, resource management, and distributed systems.

5603 Numerical Analysis

(3-0) 3 hours credit. Prerequisite: MAT 3633 or consent of instructor. Emphasis on the mathematical analysis of numerical methods. Areas of study include solution of nonlinear equations and function optimization, approximation theory, and numerical quadrature. (Same as MAT 5603. Credit cannot be earned for both CS 5603 and MAT 5603.)

5623 Simulation Techniques

(3-0) 3 hours credit. Prerequisites: CS 1723 and STA 3523, or consent of instructor.

Techniques in simulation on a digital computer. Generation of random numbers from a distribution, Monte Carlo techniques, and use of simulation languages. Development of simulation models for specific problems.

5633 Analysis of Algorithms

(3-0) 3 hours credit. Prerequisite: CS 3343.

Models of computation, design techniques such as divide-and-conquer and dynamic programming, graph algorithms, and sets and union-find. Additional topics chosen from pattern matching, integer and polynomial arithmetic, and the fast Fourier transform.

5973 Directed Research

(3-0) 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record in which the course is offered.

The directed research course may involve either a laboratory or a theoretical problem. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6103 Distributed Software Development

(3-0) 3 hours credit. Prerequisites: CS 5103 and 5523.

Development and management of distributed software, including cooperative tools and CASE. The course considers the aspects of managing the configuration of software during its life cycle. Topics include identification, control, auditing, and status accounting. Simulation of a configuration control board process.

6113 Program Visualization and Monitoring

(3-0) 3 hours credit. Prerequisite: CS 5113.

Concepts and techniques of software instrumentation. Window systems programming for postmortem and real-time visualization of program behavior. Applications of visual execution monitors in performance evaluation and debugging.

6133 Software Specification and Verification

(3-0) 3 hours credit. Prerequisite: CS 5633.

This course focuses on languages for specification of programs as well as on verification techniques for sequential, concurrent, and distributed programs.

6243 Machine Learning

(3-0) 3 hours credit. Prerequisite: CS 5233.

This course studies machine learning techniques in the area of artificial intelligence. Topics include inductive learning, unsupervised learning, speedup learning, and computational learning theory.

6253 Topics in Neural Networks

(3-0) 3 hours credit. Prerequisite: Graduate standing.

Analysis of neural networks. Topics selected from biological nervous systems and learning, threshold logic units, perceptrons, spatial and temporal associative memories, Hopfield nets, backpropagation, Boltzmann machines, Kohonen networks, the Neocognitron, and mathematical models of neural systems. Advanced topics include neural network design, competitive learning, the CMAC model, adaptive resonance theory, bidirection associative memories, Kanerva self-propagating search, advanced simulated annealing, neurocomputer implementations, and advanced genetic algorithms. May be repeated for credit when topics vary.

6363 Advanced Compiler Construction

(3-0) 3 hours credit. Prerequisite: CS 4713 or 5363.

Areas of study include code generation techniques for vector machines and multiprocessors, implementation of higher-level imperative and functional languages, and run-time system support for distributed programming languages.

6463 Advanced Topics in Computer Science

(3-0) 3 hours credit. Prerequisite: Graduate standing and consent of instructor. Advanced topics in an area of computer science. May be repeated for credit when topics vary.

6513 Advanced Architecture

(3-0) 3 hours credit. Prerequisites: CS 5513 and 5523.

Areas of study include advanced architectures, including massively parallel and distributed systems. Issues of communication, fault tolerance, and performance are addressed.

6523 Distributed Operating Systems

(3-0) 3 hours credit. Prerequisites: CS 5513 and 5523.

Distributed operating systems issues, including migration, naming, reliability, security, resource allocation, and scheduling are addressed in heterogeneous and homogeneous systems. Time-critical data such as video and audio are considered.

6543 Networks

(3-0) 3 hours credit. Prerequisite: CS 5523.

State-of-the-art transmission media, interfaces, and protocols are addressed. ATM, FDDI, Sonet, BISDN, and other evolving standards are discussed.

6553 Performance Evaluation

(3-0) 3 hours credit. Prerequisites: CS 5523 and 5513.

Performance modeling, analysis, simulation, and measurement.

- 6593 Advanced Topics in Distributed Systems**
(3-0) 3 hours credit. Prerequisite: CS 5523.
Advanced topics in distributed systems. May be repeated for credit when topics vary.
- 6613 Parallel Numerical Methods and Software**
(3-0) 3 hours credit. Prerequisites: CS 5603 and 6643.
The major goal of this course is to introduce students to the methods, tools, and ideas of parallel numerical computation. Important scientific application development and the basic methods for their solutions are addressed. Relevant mathematical software is reviewed and its use is outlined. Extensive examples and case studies are given. Techniques of constructing parallel numerical software are studied.
- 6643 Parallel Processing**
(3-0) 3 hours credit. Prerequisites: CS 5513 and 5523.
Parallel models of computation, performance measurement, and modeling of parallel algorithms and application studies on parallel computers.
- 6653 Parallel Algorithms**
(3-0) 3 hours credit. Prerequisites: CS 5513 and 5633.
Theoretical analysis of parallel algorithms and models. Studies of the fastest and most efficient parallel algorithms for a variety of problems. Emphasis is on fundamental results and techniques and on rigorous analysis of algorithmic performance. The structures and mapping relationships between the dominant network architectures and algorithms are also covered.
- 6693 Advanced Topics in Application Development**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Advanced applications in applications development. May be repeated for credit when topics vary.
- 6723 Image Processing**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Topics include image acquisition, enhancement, transformations, filters, compression, segmentation and edge detection, morphology, and recognition.
- 6953 Independent Study**
3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.
- 6961 Comprehensive Examination**
1 hour credit. Prerequisite: Approval of the appropriate graduate studies committee to take the Comprehensive Examination.
Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate

Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when topics vary, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6983 Master's Thesis

3 hours credit. Prerequisites: Consent of thesis director.

Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

7123 Research Seminar

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

Presentation and analysis of literature in a selected area of research.

May be repeated, but only 6 hours will count toward the Ph.D. degree requirements.

7211-3 Doctoral Research

1 to 3 hours credit. Prerequisite: Successful completion of the written part of the Qualifying Examination.

May be repeated for credit, but no more than 12 hours may be applied to the Ph.D. degree requirements. (Formerly CS 7243.)

7311-3 Doctoral Dissertation

1 to 3 hours credit. Prerequisite: Admission to candidacy for doctoral degree.

May be repeated for credit, but no more than 12 hours may be applied toward the Ph.D. degree requirements. (Formerly CS 7693.)

DIVISION OF EARTH AND PHYSICAL SCIENCES

Master of Science Degree in Chemistry

The purpose of the Master of Science degree program in Chemistry is to offer students the opportunity to acquire a sound preparation of the fundamentals in several areas of chemistry, to introduce students to recent advances in chemical theory and methods, and to encourage research in a specific area of study.

Graduate study in chemistry is offered leading to the M.S. degree with the following interest areas: analytical and environmental chemistry, bioorganic chemistry, biophysical chemistry, inorganic chemistry, organic chemistry, physical chemistry, and chemical physics.

Faculty expertise in each of the interest areas offers the opportunity for direct student-faculty interaction for thesis development through coursework and research. Additional cooperative projects and programs are available with other area research institutions.

Qualified students are encouraged to apply for teaching and/or research assistantships and fellowships. Requests should be sent to the Director of the Division of Earth and Physical Sciences when application is made for admission to UTSA.

Program Admission Requirements. In addition to satisfying the University-wide graduate admission requirements, applicants must complete or have completed a minimum of 24 undergraduate semester hours in chemistry, 12 or more of which must be upper-division courses. Included in the undergraduate chemistry requirement are two semesters each of organic and physical chemistry with the appropriate laboratories. All undergraduate chemistry courses must be completed with a minimum grade-point average of 3.0.

Applicants must submit scores from the Graduate Record Examination (GRE).

A minimum of two letters of recommendation from persons familiar with the applicant's undergraduate scholastic record must be sent to the Division of Earth and Physical Sciences at the same time application is made for admission to UTSA.

Thesis Option in Chemistry

Degree Requirements. The Master of Science program requires the successful completion of a minimum of 34 semester credit hours. Candidates must complete the following:

A. Required courses (25 semester credit hours):

CHE	5113	Advanced Organic Chemistry I	3 hours
CHE	5133	Advanced Inorganic Chemistry	3 hours
CHE	5163	Advanced Instrumental Analysis	3 hours
CHE	5192	Advanced Spectral Measurement and Interpretation I	2 hours
CHE	5202	Advanced Spectral Measurement and Interpretation II	2 hours

CHE	5213	Chemical Thermodynamics	3 hours
CHE	5271	Graduate Seminar in Chemistry	3 hours
CHE	6983	Master's Thesis, including an oral defense of the written thesis	6 hours

Registration for CHE 5271 is required for each semester of residence, although no more than 3 semester credit hours can be applied to the master's degree

- B. A minimum of 6 semester credit hours of electives in chemistry, as approved by the Graduate Advisor of Record, is required

The following interest areas are available for study:

Analytical and environmental chemistry
 Bioorganic chemistry
 Biophysical chemistry
 Inorganic chemistry
 Organic chemistry
 Physical chemistry and chemical physics

- C. A minimum of 3 semester credit hours of supportive electives are required in chemistry, advanced mathematics, computer science, earth and physical sciences, and/or biology as approved by the Graduate Advisor of Record
- D. Students must successfully defend their thesis research results before their graduate committee prior to the submission of the thesis to the Dean of Graduate Studies for approval

Nonthesis Option in Chemistry

Degree Requirements. This program requires the successful completion of a minimum of 37 semester credit hours. Candidates for the degree must complete the following:

- A. Required courses (25 semester credit hours):

CHE	5113	Advanced Organic Chemistry I	3 hours
CHE	5133	Advanced Inorganic Chemistry	3 hours
CHE	5163	Advanced Instrumental Analysis	3 hours
CHE	5192	Advanced Spectral Measurement and Interpretation I	2 hours
CHE	5202	Advanced Spectral Measurement and Interpretation II	2 hours
CHE	5213	Chemical Thermodynamics	3 hours
CHE	5271	Graduate Seminar in Chemistry	3 hours
CHE	5973	Directed Research	6 hours

Registration for CHE 5271 is required for each semester of residence, although no more than 3 semester credit hours can be applied to the degree

- B. 6 semester credit hours of laboratory work in chemistry in two distinctly different areas, normally taken as Independent Study and completed before enrolling in CHE 5973
- C. 6 semester credit hours of elective organized course support work within the College of Sciences and Engineering, as approved by the Graduate Advisor of Record
- D. Students must pass a final oral comprehensive examination, scheduled during the student's last semester of work, for completion of the degree program

COURSE DESCRIPTIONS CHEMISTRY (CHE)

- 5113 Advanced Organic Chemistry I**
(3-0) 3 hours credit. Prerequisites: 8 hours each of undergraduate organic chemistry and physical chemistry or graduate standing in chemistry.
An advanced study of topics in organic chemistry such as stereochemistry, conformational analysis, nonbenzenoid aromaticity, and organic reaction mechanisms.
- 5133 Advanced Inorganic Chemistry**
(3-0) 3 hours credit. Prerequisite: CHE 4263 or an equivalent.
Modern theories of chemical bonding, structure of inorganic compounds, reaction mechanisms, organometallic chemistry, and cluster compounds.
- 5163 Advanced Instrumental Analysis**
(3-0) 3 hours credit. Prerequisites: CHE 3224 and 3243 or an equivalent.
The physical and chemical principles of modern instrumental techniques used for chemical analysis, with emphasis on absorption, emission, magnetic resonance, and Raman spectroscopies; mass spectrometry; chromatography; and electrochemical techniques.
- 5192 Advanced Spectral Measurement and Interpretation I**
(0-6) 2 hours credit. Prerequisites: CHE 5163, 3243, and 4373 or their equivalents; or consent of the instructor. Enrollment will normally be limited to M.S. degree-seeking students.
A regularly scheduled topics course linked with CHE 5202 (spring semester) including experimentation, data analysis, and problem solving using modern chemical instrumentation. In the CHE 5192 and CHE 5202 sequence, students must demonstrate basic competency in a minimum of three of the following: FT-NMR, FT-IR, UV-vis and fluorescence, mass spectrometry, computer-based chemical modeling, gas and liquid chromatography, and spectral data analysis. May be repeated for credit with the approval of the Graduate Advisor of Record when topics vary, but no more than 2 semester credit hours can be applied to the master's degree. A grade of RP will be given in CHE 5192 until both CHE 5192 and CHE 5202 are completed; this occurs when the student has shown competency in a minimum of three techniques.

5202 Advanced Spectral Measurement and Interpretation II

(0-6) 2 hours credit. Prerequisites: CHE 5163, 3243, and 4373 or their equivalents; or consent of the instructor. Enrollment will normally be limited to M.S. degree-seeking students.

A regularly scheduled topics course linked with CHE 5192 (fall semester) including experimentation, data analysis, and problem solving using modern chemical instrumentation. In CHE 5192 and CHE 5202 sequence, students must demonstrate basic competency in a minimum of three of the following: FT-NMR, FT-IR, UV-vis and fluorescence, mass spectrometry, computer-based chemical modeling, gas and liquid chromatography, and spectral data analysis. May be repeated for credit with the approval of the Graduate Advisor of Record when topics vary, but no more than 2 semester credit hours can be applied to the master's degree. A grade of RP will be given in CHE 5202 until both CHE 5192 and CHE 5202 are completed; this occurs when the student has shown competency in a minimum of three techniques.

5213 Chemical Thermodynamics

(3-0) 3 hours credit. Prerequisites: 8 hours each of undergraduate organic chemistry and physical chemistry or graduate standing in chemistry.

An advanced study of chemical thermodynamics. Discussion of chemical, electrochemical, and interphase equilibria.

5223 Chemical Kinetics

(3-0) 3 hours credit. Prerequisite: CHE 3224 or an equivalent.

An advanced study of topics in chemical kinetics, such as formal kinetics, theory of rates of chemical reactions, and reaction mechanisms.

5243 Quantum Chemistry

(3-0) 3 hours credit. Prerequisites: CHE 4253 and MAT 2213, or consent of instructor.

A study of concepts and methods of quantum mechanics, with emphasis on the nature of the chemical bond and the interaction of electromagnetic radiation with molecules.

5271 Graduate Seminar in Chemistry

(0-3) 1 hour credit. Prerequisite: Graduate standing in chemistry or consent of the Graduate Advisor of Record.

Current research and literature seminars presented by faculty, visiting lecturers, and master's candidates. Chemistry master's-degree-seeking students must register every semester while in residence, but only 3 hours will apply toward the master's degree.

5503 Bioorganic Chemistry

(3-0) 3 hours credit. Prerequisite: CHE 5113 or consent of the instructor.

Chemical transformations of biologically important organic compounds; examination of enzyme active sites. Discussion of theories of catalysis, stereochemistry, electron-transfer, and molecular structure in the context of biological systems.

5513 Biophysical Chemistry

(3-0) 3 hours credit. Prerequisites: CHE 5113 and CHE 5213, or consent of the instructor.

Physical chemistry of natural macromolecular systems. Spectroscopy: UV Visible and CD spectroscopy of proteins and nucleic acids; fluorescence of proteins, nucleic acids, and extrinsic labels; nuclear and electron magnetic resonance of enzymes and cell membranes. Thermodynamics of macromolecular interactions; linked functions and allosteric models.

5623 Statistical Thermodynamics

(3-0) 3 hours credit. Prerequisite: CHE 3224 or an equivalent.

A molecular approach to the study of the physico-chemical properties of gases, liquids, and solids. A molecular study of chemical and interphase equilibria.

5902 Teaching Seminar

(1-2) 2 hours credit. Prerequisite: Graduate standing in chemistry and concurrent designation as a teaching assistant in the chemistry program, or consent of instructor.

The course is designed to improve the instructional effectiveness of graduate students' teaching at the college level. The course will cover but is not limited to board-work, clear speech, teacher-student interaction, professional responsibilities, course content and pace, grading policy, quiz writing, sensitivity training to student needs, information on technical support, and guest lecturers on special topics. The grade report for the course is either CR (satisfactory performance) or NC (unsatisfactory performance). May be repeated when the topics vary. This course may not be applied as credit toward any M.S. degree in the Division of Earth and Physical Sciences.

5973 Directed Research

3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. The directed research course may involve either a laboratory or a theoretical problem. Normally a written report is required. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6113 Advanced Organic Chemistry II

(3-0) 3 hours credit. Prerequisite: CHE 5113 or consent of instructor. Study of organic reaction mechanisms.

6123 Methods of Organic Synthesis

(3-0) 3 hours credit. Prerequisite: CHE 5113 or consent of instructor.

A study of modern methods of organic functional group transformation and of simple carbon skeleton construction; introduction to the synthon concept and to retrosynthetic analytical methodology for designing rational synthetic approaches to complex organic molecules.

- 6153 Advanced Topics in Inorganic and Physical Chemistry**
(3-0) 3 hours credit. Prerequisites: Consent of instructor and Graduate Advisor of Record.
An organized course offering the opportunity for a specialized study of advanced aspects of inorganic and/or physical chemistry. The course may be repeated for credit, but not more than 6 hours may be applied to the master's degree.
- 6163 Advanced Topics in Analytical and Structural Chemistry**
(3-0) 3 hours credit. Prerequisites: Consent of instructor and Graduate Advisor of Record.
An organized course offering the opportunity for a specialized study of advanced techniques of chemical analysis and/or determination of molecular structure. The course may be repeated for credit, but not more than 6 hours may be applied to the master's degree.
- 6173 Advanced Topics in Organic, Medicinal, Bioorganic, and Biophysical Chemistry**
(3-0) 3 hours credit. Prerequisites: Consent of instructor and Graduate Advisor of Record.
An organized course offering the opportunity for a specialized study of advanced aspects in organic, medicinal, bioorganic, and/or biophysical chemistry. The course may be repeated for credit, but not more than 6 hours may be applied to the master's degree.
- 6183 Topics in the Chemistry of Natural Products**
(3-0) 3 hours credit. Prerequisites: CHE 5113 and CHE 6123; CHE 5503 is recommended.
Selected topics in the chemistry and biochemistry of natural products and related compounds of biological and medicinal interest. Course may be repeated for credit when topics vary, but not more than 6 hours may apply to the master's degree.
- 6903 Progress in Chemistry**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for a specialized study of current aspects of chemistry not normally available as part of the regular course offerings. The course may be repeated for credit, but not more than 6 hours may be applied to the master's degree.
- 6951-3 Independent Study**
1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the appropriate Graduate Studies Committee.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when the topics vary, but not more than 6 hours, regardless of discipline, will apply to a master's degree.

6983 Master's Thesis

3 hours credit. Prerequisites: Permission of the Graduate Advisor of Record and thesis director.

Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

Master of Science Degree in Environmental Sciences

The Master of Science degree in Environmental Sciences is available to students with undergraduate and/or graduate degrees in an engineering or scientific discipline from an accredited college or university. This program is designed for individuals seeking initial or continuing preparation for careers involving the allocation, protection, regulation, and use of environmental resources.

Program Admission Requirements. In addition to the University-wide graduate admission requirements, applicants must satisfy the following:

1. Submission of results on the Graduate Record Examination (GRE) or equivalent score on other relevant tests to the Office of Graduate Studies
2. Preferable completion of the following:
 - a. One semester of organic chemistry and two semesters of physical chemistry
 - b. A statistics course equivalent to STA 1993 Statistical Methods for the Life and Social Sciences
 - c. Two semesters of biology or other life sciences coursework
3. Two or more letters of recommendation from people familiar with the applicant's undergraduate scholastic record, sent to the Director of the Division of Earth and Physical Sciences when application for admission is made

Applicants who do not meet these program admission requirements may be considered on an individual basis by the Graduate Studies Committee.

Thesis Option in Environmental Sciences

Degree Requirements. The Master of Science program in Environmental Sciences requires completion of a minimum of 33 semester credit hours (exclusive of coursework or other study required to remove deficiencies).

Candidates for the degree must complete the following:

A. Required courses (27 semester credit hours):

ES	5023	Environmental Statistics	3 hours
ES	5033	Geographical Information Systems	3 hours
ES	5103	Environmental Ecology	3 hours
ES	5123	Project Analysis	3 hours
ES	5403	Industrial Process	3 hours
ES	5503	Environmental Regulations	3 hours
ES	5803	Environmental Planning and Management	3 hours
ES	6983	Master's Thesis	6 hours

Registration for ES 6983 Master's Thesis is required for each semester of residence, although no more than 6 semester credit hours can be applied to the degree

B. 6 semester credit hours at the advanced level (6000 level) in environmental sciences, as approved by the Graduate Advisor of Record, are required. Independent Study and Internship hours may not be counted toward the thesis option in environmental sciences.

Nonthesis Option in Environmental Sciences

Degree Requirements. The nonthesis option requires completion of a minimum of 36 semester credit hours (exclusive of coursework or other study required to remove deficiencies).

Candidates for the degree must complete the following:

A. Required courses (24 semester credit hours):

ES	5023	Environmental Statistics	3 hours
ES	5033	Geographical Information Systems	3 hours
ES	5103	Environmental Ecology	3 hours
ES	5123	Project Analysis	3 hours
ES	5403	Industrial Process	3 hours
ES	5503	Environmental Regulations	3 hours
ES	5803	Environmental Planning and Management	3 hours
ES	6893	Professional Report	3 hours

Registration for ES 6893 Professional Report requires each student to prepare a scholarly paper suitable for publication. A draft must be presented to the student's graduate advisory committee for review and approval. The student is also required to present the paper at an open seminar.

B. 12 semester credit hours of elective support work:

Option 1. 12 semester credit hours of graduate courses constituting a coherent program of scholarship with at least 9 semester credit hours selected from the 6000-level environmental sciences courses.

Coursework in this option must have the approval of the Graduate Advisor of Record. Outside coursework must clearly support the student's program of study.

Option 2. 6 to 9 semester credit hours of graduate courses in a single related discipline in which a student has the required prerequisites. Outside coursework must support a specialization within environmental sciences, such as biology, chemistry, civil engineering, or geology.

3 to 6 semester credit hours of 6000-level graduate courses in environmental sciences.

- C.** Students pursuing the nonthesis option may not apply more than 3 hours of Independent Study, 6 hours of Internship, or any combination that totals more than 6 semester credit hours.
- D.** Candidates are required to pass an oral comprehensive examination after they have completed at least 30 semester credit hours of coursework. ES 6961 Comprehensive Examination (1 hour) may not be applied to the 36-semester-credit-hour minimum.

COURSE DESCRIPTIONS ENVIRONMENTAL SCIENCES (ES)

5023 Environmental Statistics

(3-0) 3 hours credit. Prerequisites: MAT 1033 and STA 1993 or their equivalent, and consent of instructor.

Introductory course in systems analysis emphasizing its application for the management of environmental and public systems. Problem formulation, mathematical modeling, and procedures are introduced through case studies that include energy consumption, soil contamination, leak detection, and air pollution. In these case studies, students become acquainted with quantitative governmental regulations formalized by the Environmental Protection Agency. Quantitative tools include exploratory data analysis, design of experiments, analysis of variance, regression analysis, and time series. Optimization techniques are taught within regression analysis.

5033 Geographical Information Systems

(2-2) 3 hours credit.

Application of the computer to environmental planning and management problems. The computer as a mapping device for graphical display of spatially related data and the use of relational databases for these applications. Geographic Information Systems and other uses of the computer are included. (Formerly ENV 5033. Credit cannot be earned for both ES 5033 and ENV 5033.)

5103 Environmental Ecology

(3-0) 3 hours credit.

The impact of humanity's activities on the environment: their effect on water, land, animal, and human resources. An evaluation of present and future strategies to preserve a healthy environment. (Formerly ENV 6613 and ES 6203. Credit cannot be earned for ES 5103, and either ENV 6613 or ES 6203.)

5123 Project Analysis

(3-0) 3 hours credit.

This course examines the complex processes and factors in the evaluation of large-scale projects involving natural resources. It brings together the tools required to evaluate the physical, economic, financial, legal, and political constraints of these projects. (Formerly ENV 6873 and ES 6873. Credit cannot be earned for ES 5123, and either ENV 6873 or ES 6873.)

5213 Environmental Geology

(3-0) 3 hours credit.

Geologic materials and processes as related to their influence on the human physical environment. Effects of landscape modification and geologic hazards such as earthquakes and landslides. Properties of minerals, rocks, and soils and geologic aspects of waste disposal and water resources are examined. (Course cannot be used for graduate credit by students in Geology. Formerly ENV 5363. Credit cannot be earned for both ES 5213 and ENV 5363.)

5403 Industrial Process

(3-0) 3 hours credit.

Introduces basic physical, chemical, and biological processes used to produce products. Examines specific industries with the goal of enabling students to understand industrial process design and operation well enough to assess them from the perspective of environmental management.

5493 Water Pollution Control

(3-0) 3 hours credit.

Principles and methods of water pollution control process design and operation; selection and optimization of total treatment processes as well as appurtenances and accessory equipments; and methods involved in the design process and the selection of the hardware. (Formerly ENV 6893. Credit cannot be earned for both ES 5493 and ENV 6893.)

5503 Environmental Regulations

(3-0) 3 hours credit.

Current environmental enabling acts and regulations are covered, with emphasis on federal acts, such as the National Environmental Policy Act, Clean Water Act, Resource Conservation and Recovery Act, and associated regulations. Management strategies for environmental compliance are also presented. (Formerly ENV 5003. Credit cannot be earned for both ES 5503 and ENV 5003.)

5613 Economics of Environmental Resources

(3-0) 3 hours credit.

A study of governmental and private programs to promote prudent, efficient use of natural resources by society. Cost-benefit analysis is utilized to evaluate alternate solutions in formulating policy. (Formerly ENV 6623. Credit cannot be earned for both ES 5613 and ENV 6623.)

5803 Environmental Planning and Management

(3-0) 3 hours credit.

Regional, state, and national efforts to plan for the allocation and use of environmental resources are analyzed. Focus is on the strengths and weaknesses of traditional planning processes and regulation mechanisms. Technical, economic, and institutional considerations that influence plan development, preparation, and implementation are covered, as are citizen participation and conflict resolution. Students will prepare in-depth case studies. (Formerly ENV 6653. Credit cannot be earned for both ES 5803 and ENV 6653.)

6003 Risk and Decision Analysis

(3-0) 3 hours credit. Prerequisite: ES 5023 or consent of instructor.

Advanced application of systems analysis to the solution of environmental problems and the building and solving of mathematical models. The role of analytical tools such as cost analysis, decision, and utility theory as they are applied to the efficient utilization of natural resources are also covered. (Formerly ENV 6903. Credit cannot be earned for both ES 6003 and ENV 6903.)

6013 Instrumental Environmental Methods for Environmental Analysis

(2-2) 3 hours credit. Prerequisite: One year of college chemistry or consent of instructor.

Use, as well as interpretation of results, of various analytical and instrumental techniques for detecting environmental pollutants. EPA-approved techniques are emphasized. (Formerly ENV 5013 and ES 5013. Credit cannot be earned for ES 6013, and either ENV 5013 or ES 5013.)

6103 Environmental Systems

(3-0) 3 hours credit.

Atmosphere, lithosphere, hydrosphere, and biosphere are treated as interrelated systems. Human impact and interaction within and among these systems are studied. Preparation and evaluation of environmental impact statements and assessments are included. (Formerly ENV 5533 and ES 5203. Credit cannot be earned for ES 6103, and either ENV 5533 or ES 5203.)

6513 Advanced GIS

(2-2) 3 hours credit. Prerequisite: ES 5033 or consent of instructor.

Geographic Information Systems are an excellent tool for modeling environmental systems and managing or processing environmental data. This course uses ArcView, ArcView Spatial Analyzer, and PC ArcInfo to solve and model environmental problems, including hazardous waste remediation, regulatory compliance, environmental feature mapping, groundwater contamination, and air pollution. Global Positioning Systems

are used to map environmental features in field studies. Additional topics include digitizing, topology correction, geographic projections, and geopositioning of images.

6523 Professional Practice in Environmental Planning and Management

(3-0) 3 hours credit.

A study of the standards of environmental practice in the private and public sectors; professional ethics and responsibilities, proposals, contracts, mediation, professional liability, report preparation, and other aspects of professional practice are covered. (Formerly ENV 5023. Credit cannot be earned for both ES 6523 and ENV 5023.)

6533 Diplomacy and Ethics for Resource Management

(3-0) 3 hours credit.

Exploration of issues embedded in resource diplomacy and ethics in the twenty-first century. Resource diplomacy and ethics are examined in the context of technology, economics, and institutions.

6813 Water Resources

(3-0) 3 hours credit.

Application of management principles to the efficient use of water resources by people and their public and private institutions. Water is examined in terms of its value, use, and changing role in the context of economics, history, politics, and technology. (Formerly ENV 6813. Credit cannot be earned for both ES 6813 and ENV 6813.)

6823 Land Resources

(3-0) 3 hours credit. Prerequisite: ES 5033 or consent of instructor.

The changing role of land as a resource as it relates to human and technological development. Land use and land-use planning in the rural-urban fringe is considered, as is the management of land as a resource in range, forestry, and agricultural production. (Formerly ENV 6823. Credit cannot be earned for both ES 6823 and ENV 6823.)

6853 Energy Resources

(3-0) 3 hours credit.

Energy utilization, energy resources development, availability of alternatives and energy resources management, conservation, and policy are presented. Applicable physical principles related to the economics, conservation, and technology of energy are covered. (Formerly ENV 6853. Credit cannot be earned for both ES 6853 and ENV 6853.)

6863 Air Quality Management

(3-0) 3 hours credit.

Introduction to the field of air pollution control: sources and physical, chemical, and biological effects of air pollutants. Overall objectives and systematic efforts to deal with air pollution, including air quality criteria; development of air quality standards and plans for implementing them. (Formerly ENV 6863. Credit cannot be earned for both ES 6863 and ENV 6863.)

6883 Solid Waste Management

(3-0) 3 hours credit.

Practical aspects of solid waste management, with emphasis placed on the interrelationship of environmental, economic, institutional, and technological aspects of source reduction, recycling, waste to energy, and perpetual care. (Formerly ENV 6883. Credit cannot be earned for both ES 6883 and ENV 6883.)

6893 Professional Report

3 hours credit. Prerequisite: Permission of the Graduate Advisor of Record and the faculty advisor or director.

Research and preparation of an in-depth study of a complex environmental problem. Credit will be awarded upon completion of the written professional report.

6951-3 Independent Study

1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the appropriate Graduate Studies Committee to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6963-6 Internship

3 to 6 hours credit. Prerequisite: Graduate standing, 21 semester hours of graduate work, and consent of Graduate Advisor of Record.

An opportunity for students to work in a setting that permits them to apply what they have learned in the formal instruction part of the program. May be repeated for credit, but not more than 6 hours will apply to the master's degree.

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when the topics vary, but not more than 6 hours, regardless of discipline, will apply to a master's degree.

6983 Master's Thesis

3 hours credit. Prerequisites: Permission of the Graduate Advisor of Record and thesis director.

Thesis research preparation. May be repeated for credit, but not more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

Master of Science Degree in Geology

The Master of Science degree program in Geology offers students the opportunity for advanced study and research leading to the M.S. degree in the following emphasis areas: water resources (hydrogeology), environmental geology, and applied geology.

Qualified students are encouraged to apply for teaching and/or research assistantships and fellowships. Requests should be addressed to the Director of the Division of Earth and Physical Sciences when application is made for admission to UTSA.

Program Admission Requirements. In addition to satisfying the University-wide graduate admission requirements, applicants are expected to have completed an undergraduate degree in geology (equivalent to UTSA's) or a bachelor's degree in chemistry, physics, mathematics, computer science, life sciences, or engineering from an accredited institution of higher education. Applicants with deficiencies in their academic background are required to consult with the Graduate Advisor of Record to establish an acceptable program of study with the approval of the graduate faculty. In such cases, students should anticipate that additional time will be required to complete the degree.

Applicants must submit scores from the Graduate Record Examination (GRE). Three letters of recommendation should be sent to the Director of the Division of Earth and Physical Sciences.

Thesis Option in Geology

Degree Requirements. The Master of Science program in Geology requires the successful completion of a minimum of 33 semester credit hours.

Candidates for the degree must complete

A. 8 semester credit hours minimum in the geology core curriculum:

GEO	5991	Graduate Seminar in Geology	2 hours
GEO	6983	Master's Thesis	6 hours

No more than 2 semester credit hours of GEO 5991 Graduate Seminar and 6 semester credit hours of GEO 6983 Master's Thesis can be applied to the master's degree

B. Candidates must choose one of the following three emphases:

Water Resources (Hydrogeology)

12 semester credit hours minimum, to include the following courses:

GEO	5603	Hydrogeology
GEO	5703	Advanced Hydrogeology
GEO	6203	Aqueous Geochemistry
GEO	6603	Subsurface Fluid Mechanics

13 semester credit hours minimum, selected from the graduate course offerings in geology, environmental sciences, civil engineering, and biology with approval of the Graduate Advisor of Record

Environmental Geology

6 semester credit hours in

GEO	5203	Advanced Environmental Geology
GEO	5303	Advanced Geomorphology

10 semester credit hours minimum, selected from the graduate course offerings in geology

9 semester credit hours minimum, selected from the graduate course offerings in the College of Sciences and Engineering

Applied Geology

25 semester credit hours minimum, selected from graduate course offerings with the approval of the Graduate Advisor of Record

- C. Under special circumstances, students may take up to 6 semester credit hours of upper-division undergraduate work in the College of Sciences and Engineering with approval of the Graduate Advisor of Record

Nonthesis Option in Geology

The nonthesis option applies only to the Water Resources (Hydrogeology) and Environmental Geology emphases.

Degree Requirements. The Master of Science program in Geology requires the successful completion of a minimum of 39 semester credit hours.

Candidates for the degree must complete

- A. 5 semester credit hours minimum in the geology core curriculum:

GEO	5991	Graduate Seminar in Geology	2 hours
GEO	5973	Directed Research	3 hours

No more than 2 hours of GEO 5991 Graduate Seminar and 3 hours of GEO 5973 Directed Research can be applied to the master's degree

- B. Candidates must choose one of the following two emphases:

Water Resources (Hydrogeology)

12 semester credit hours minimum, to include the following courses:

GEO	5603	Hydrogeology
GEO	5703	Advanced Hydrogeology
GEO	6203	Aqueous Geochemistry
GEO	6603	Subsurface Fluid Mechanics

22 semester credit hours minimum, selected from the graduate course offerings in geology, environmental sciences, civil engineering, and biology with approval of the Graduate Advisor of Record

Environmental Geology

6 semester credit hours minimum, to include the following courses:

GEO	5203	Advanced Environmental Geology
GEO	5303	Advanced Geomorphology

10 semester credit hours minimum, selected from the graduate course offerings in geology

18 semester credit hours minimum, selected from the graduate course offerings in geology, environmental sciences, civil engineering, chemistry, and biology with approval of the Graduate Advisor of Record

- C. Under special circumstances, students may take up to 6 hours of upper-division undergraduate work within the College of Sciences and Engineering with approval of the Graduate Advisor of Record
- D. Candidates are required to pass an oral comprehensive examination after they have completed at least 30 semester credit hours of coursework. GEO 6961 Comprehensive Examination (1 hour) does not contribute toward the 39-semester-credit-hour minimum.

COURSE DESCRIPTIONS GEOLOGY (GEO)

5203 Advanced Environmental Geology

(3-0) 3 hours credit. Prerequisite: GEO 4063 or consent of instructor.

Study of the geology of the environment, with emphasis on the physical and social effects of catastrophic geologic processes on engineered structures.

5304 Advanced Geomorphology

(3-2) 4 hours credit. Prerequisites: GEO 4113 and 4121, or consent of instructor.

Interpretation of landforms, with emphasis on mechanics of surficial processes and the relationship to type of rock material, structure, and climate. Field trips required. (Formerly GEO 5303. Credit cannot be earned for both GEO 5303 and GEO 5304.)

5423 Advanced Mineralogy

(2-3) 3 hours credit. Prerequisite: GEO 3043, 3052, or consent of instructor. Study of crystal chemistry, thermodynamics, and phase equilibria of various mineral groups; petrology and paragenesis relationships are examined. Field trips required.

5454 Advanced Paleontology

(3-3) 4 hours credit. Prerequisite: GEO 3083, 3123, 3131, or consent of instructor.

Study of fossil assemblages, environmental significance of fossil associations, and reconstruction of depositional environments as related to the separation and differentiation of rock units in time and space. Field trips required.

5504 Advanced Stratigraphy

(3-3) 4 hours credit. Prerequisite: GEO 3083, 3123, 3131, or consent of instructor.

Chronologic study of stratigraphic systems, physical properties and facies, depositional and paleogeographic implications, correlation, nomenclature, and biostratigraphy. Sequence stratigraphy and seismic and log analyses are studied. Field trips required. (Formerly GEO 5503. Credit cannot be earned for both GEO 5503 and GEO 5504.)

5603 Hydrogeology

(3-0) 3 hours credit. Prerequisite: GEO 4623 with a grade of "C" or better, or consent of instructor.

Geologic principles governing the flow of groundwater; emphasis on hydrology, flow system evolution and aquifer analysis. Field trips required.

5703 Advanced Hydrogeology

(3-0) 3 hours credit. Prerequisites: GEO 5603 and consent of instructor.

Numerical and analytical flow models, hydrogeochemical models, contaminant hydrogeology and contaminant transport.

5804 Igneous-Metamorphic Petrology

(3-3) 4 hours credit. Prerequisite: GEO 3043, 3052, 3103, 3111, or consent of instructor.

Origin and evolution of magmas. Origin and development of metamorphic grade, facies, and textures. Detailed study of igneous and metamorphic rock suites. Field trips required.

- 5853 Mapping of Complex Geological Structures**
(0-6) 3 hours credit. Prerequisites: GEO 4946 or an equivalent, and consent of instructor.
Field study of an area of complex geology. Field mapping, written reports, and field trips are required. May be repeated for credit up to a maximum of 6 hours when topic varies.
- 5894 Advanced Structural Geology**
(3-3) 4 hours credit. Prerequisite: GEO 3103, 3111, or consent of instructor.
In-depth study of the various aspects of structural geology: stress and strain, behavior of materials, failure criteria, fault analysis, rheological properties of geologic materials, fold analysis, and subsurface analysis. Field trips required.
- 5904 Carbonate Petrology**
(3-3) 4 hours credit. Prerequisite: GEO 3043, 3052, 3123, 3131, or consent of instructor.
Thin-section analysis and hand-specimen study of carbonate sediment and rocks, carbonate classifications, carbonate facies, models, and carbonate diagenesis. Field trips required.
- 5954 Sandstone Petrology**
(3-3) 4 hours credit. Prerequisite: GEO 3043, 3052, 3123, 3131, or consent of instructor.
Thin-section analysis and hand-specimen study of clastic rocks, classifications, interpretation of provenance, clastic sedimentary facies, and clastic diagenesis. Field trips required.
- 5971-3 Directed Research**
1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. The directed research course may involve a laboratory, field-based, or theoretical problem. May be repeated for credit, but not more than 3 hours, regardless of discipline, will apply to the master's degree.
- 5991 Graduate Seminar in Geology**
(0-3) 1 hour credit. Prerequisite: Graduate standing in geology or consent of the Graduate Advisor of Record.
Topical issues chosen by faculty and current research seminars presented by faculty, visiting lecturers, and master's candidates. Only 2 hours may be applied toward the master's degree.
- 6153 Depositional Systems**
(3-0) 3 hours credit. Prerequisite: GEO 5954 or consent of instructor.
The processes, characteristics, and relationships among continental, transitional, and marine depositional systems; specific relationships that must be understood for each subsystem and how each subsystem relates to the global system. Field trips required.

- 6183 Basin Analysis and Sedimentary Geology**
(3-0) 3 hours credit. Prerequisite: GEO 6153 or consent of instructor.
An interdisciplinary integration of geodynamics, mathematical and physical modeling, and sedimentary geology. Emphasizes basin formation, nature and maturation of the basin fill, and timing of events. Case histories of various basins illustrate approaches. Field trips required.
- 6203 Aqueous Geochemistry**
(2-3) 3 hours credit. Prerequisite: GEO 3374 or consent of instructor.
In-depth study and application of chemical concepts to geological problems; analyses of water-rock interaction at various temperatures and pressures.
- 6304 Isotope Geology**
(3-2) 4 hours credit. Prerequisite: GEO 3374.
Geological applications of radioactive and stable isotopes; fundamentals of isotope fractionation processes in hydrology, metamorphism, and chronostratigraphy. Laboratory methods for stable isotope sample preparation and isotope ratio-mass spectrometry.
- 6403 Advanced Geophysics**
(3-0) 3 hours credit. Prerequisite: GEO 3383 or consent of instructor.
Seismological and other geophysical methods and data for studying the physical and mechanical properties of the earth's crust, mantle, and core.
- 6603 Subsurface Fluid Mechanics**
(3-0) 3 hours credit. Prerequisites: MAT 2213 and consent of the instructor.
Fluid properties, fluid dynamics, Navier-Stokes equations, laminar flow, stability, boundary-layer theory, and flow nets.
- 6803 Electron Microscopy and Microbeam Analysis**
(1-4) 3 credit hours. Prerequisite: Consent of instructor.
Geological and geochemical applications of electron microscopy, X-ray microanalysis, and image analysis. The theory and development of electron imaging and analysis as well as case studies. The laboratory focuses on sample preparation, imaging, and elemental analysis.
- 6961 Comprehensive Examination**
1 hour credit. Prerequisites: Completion of at least 30 semester credit hours of coursework and approval of the appropriate Graduate Studies Committee to take the Comprehensive Examination.
Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of the instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when the topics vary, but not more than 6 hours, regardless of discipline, will apply to a master's degree. Field trips may be required.

6983 Master's Thesis

3 hours credit. Prerequisites: Permission of the thesis director.

Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

DIVISION OF ENGINEERING

Graduate programs in engineering include the Master of Science in Civil Engineering, the Master of Science in Electrical Engineering, and the Master of Science in Mechanical Engineering. They offer opportunities for advanced study and research designed to prepare students for leadership roles in engineering careers with industry, government, or educational institutions. A thesis option is recommended for students who are planning a career in research or who contemplate pursuing a doctorate in one of the engineering disciplines. A nonthesis option is also available for students who desire a practical industrial applications-oriented degree.

Civil engineering includes programs of study in structures, environmental sciences, systems, solid mechanics, and materials. Electrical engineering includes programs of study in signal processing, digital systems, communications, instrumentation, and control systems. Mechanical engineering includes programs of study in thermal and fluid systems, mechanical systems and design, solid mechanics, and materials.

A limited number of assistantships and fellowships are available to qualified students. Financial assistance is awarded on a competitive basis.

COURSE DESCRIPTIONS ENGINEERING (EGR)

- 5013 Analytic Techniques in Engineering Analysis**
(3-0) 3 hours credit. Prerequisite: Graduate standing in engineering or consent of instructor.
Advanced methods of applied mathematics, including linear algebra, vector differential calculus, integral theorems, differential equations, and calculus of variations.
- 5023 Numerical Techniques in Engineering Analysis**
(3-0) 3 hours credit. Prerequisite: Graduate standing in engineering or consent of instructor.
Advanced methods of applied mathematics, including numerical linear algebra, initial value problems, stability, convergence, partial differential equations, and optimization.
- 5093 Special Topics in Engineering Analysis**
(3-0) 3 hours credit. Prerequisite: MAT 3253 or an equivalent, or consent of instructor.
A comprehensive treatment of advanced methods of applied mathematics needed for the study of advanced courses in engineering. May be repeated for credit as topics vary.
- 5113 Advanced Engineering Economic Analysis**
(3-0) 3 hours credit. Prerequisite: Graduate standing in engineering.
Examination of the factors required to transform technological innovations into products. Elements of business planning are examined through a case-study approach.

5213 Topics in Systems Modeling

(3-0) 3 hours credit. Prerequisite: Graduate standing in engineering. Systems analysis approach to formulating and solving engineering problems. Topics include operational research, mathematical modeling, optimization, linear and dynamic programming, decision analysis, and statistical quality control.

Topic 1: Applied Operations Research. Application of operations research methods to practical engineering problems.

Topic 2: Engineering Systems Modeling. Modeling of modern engineering systems for operational and management control.

May be repeated for credit as topics vary.

5233 Advanced Quality Control

(3-0) 3 hours credit. Prerequisite: Graduate standing in engineering or consent of instructor.

Methods and techniques for process control, process and gage capabilities, inspection plans, American National Standard, and recent advanced techniques. Tour of manufacturing industry. Case studies in process control, outgoing quality, and costs. A project, assigned by a manufacturing company, is required, along with a final presentation of the project.

5303 Continuum Mechanics

(3-0) 3 hours credit. Prerequisite: EGR 2503 or an equivalent, or consent of instructor.

Equations of Newtonian and non-Newtonian fluid motion, kinematics, conservation laws, linear and nonlinear constitutive equations, viscoelastic fluids, mechanics of suspensions, surface flow, viscometric flows.

5313 Fracture Mechanics

(3-0) 3 hours credit. Prerequisite: EGR 3213 or an equivalent, or consent of instructor.

Introduction to failure and fracture of engineering materials, including Griffith's energy balance, stress intensity, and strain energy release rate approaches to brittle fracture. Also, Dugdale and Irwin approaches to ductile fracture. Applications to modern engineering problems.

5323 Viscoelasticity

(3-0) 3 hours credit. Prerequisites: EGR 3213 and MAT 3253 or an equivalent, or consent of instructor.

Principle of fading memory, integro-differential constitutive laws, mechanical models, time and temperature superposition, and linear and nonlinear methods. Applications to polymers, composites, and adhesives.

5413 Composite Materials

(3-0) 3 hours credit. Prerequisite: EGR 3213 or an equivalent, or consent of instructor.

Introduction to mechanics of composites, micromechanics, macromechanics, lamination theory, design, and applications of fiber-reinforced composites and particulate composites.

5423 Nonlinear Systems

(3-0) 3 hours credit. Prerequisite: MAT 3253 or equivalent, or consent of instructor.

Characterization of systems exhibiting nonlinear behavior, analytical and computational techniques in solving systems of nonlinear differential equations, and computer application in algebraic manipulations.

5513 Finite Element Methods in Mechanics

(3-0) 3 hours credit. Prerequisite: EGR 3213 or an equivalent, or consent of instructor.

Derivation and implementation of the finite element method, including boundary value and time-dependent problems.

5543 Foundations of Solid Mechanics

(3-0) 3 hours credit. Prerequisite: EGR 3213 or an equivalent, or consent of instructor.

Variational mechanics, energy methods, elementary viscoelastic/plastic problems, and wave propagation.

5553 Advanced Strength of Materials

(3-0) 3 hours credit. Prerequisite: EGR 3213 or an equivalent, or consent of instructor.

Analysis of stress and strain, two-dimensional problems in elasticity, failure theories, bending, torsion, elastic stability, and energy methods. (Formerly topic one of EGR 5233. Credit cannot be earned for both EGR 5533 and EGR 5553.)

5563 Elasticity

(3-0) 3 hours credit. Prerequisite: EGR 3213 or an equivalent, or consent of instructor.

Equilibrium, compatibility equations, strain energy methods, torsion of noncircular sections, flexure, and axially symmetric problems. (Formerly topic two of EGR 5233. Credit cannot be earned for both EGR 5533 and EGR 5563.)

5613 New and Emerging Technologies

(3-0) 3 hours credit.

Examines entrepreneurial and managerial perspectives on the process of technology innovation. Design is the organizing concept used to study the continuum from idea to sale of products and services that are spawned by innovators using new and emerging technologies. Seminar format, case-study preparation, presentation, and cooperative learning are defining characteristics of this course.

5623 Issues in Engineering Management

(3-0) 3 hours credit.

Examines issues facing managers of technology in terms of their implications for people. The context is the cycle from conception to use/disposal of products and services. The framework for analysis and synthesis is ecological, historical, and institutional. Seminar format, issue paper preparation and presentation, and cooperative learning are defining characteristics of this course.

5901 Engineering Communications

(1-0) 1 hour credit. Prerequisite: Graduate standing.

Slides, transparencies, posters, and TRI-SPORT reports; latest hardware and software for visual and presentations; individual and group presentations; and class critiques.

Master of Science Degree in Civil Engineering

The Master of Science degree in Civil Engineering is designed to provide civil engineering professionals with the opportunity to prepare for careers concerned with the critical problems of a multifaceted society. Civil engineering education and research activities focus on projects that are typically large and costly, with potentially profound environmental, social, and financial impacts.

Both a thesis and a nonthesis option are available.

Students interested in emphasizing construction management may take selected courses in architecture, civil engineering, finance, and management of technology.

Program Admission Requirements. In addition the University-wide graduate admission requirements for unconditional admission, applicants satisfy the following:

1. a satisfactory score, as specified by the Graduate Studies Committee for Civil Engineering, on the Graduate Record Examination (GRE)
2. an undergraduate degree in civil engineering or a closely related field from an accredited institution of higher education, or proof of equivalent training at a foreign institution
3. a favorable recommendation by the Master of Science in Civil Engineering Admissions Committee.

A student who does not qualify for unconditional admission may be admitted on a conditional basis as determined by the Master of Science in Civil Engineering Admissions Committee.

Degree Requirements. The minimum number of semester credit hours required for the degree, in addition to any conditional course requirements, is 33 semester credit hours for the nonthesis option and 30 semester credit hours for the thesis option. At least 24 semester credit hours must be taken at UTSA. Each candidate is required to pass a comprehensive examination and/or a thesis defense administered by his or her advisory committee, which is chaired by a full-time graduate faculty member. Degree requirements are as follows:

<i>Thesis Option</i>	Hours
Designated electives (approved by the chair of the student's advisory committee)	9
Electives chosen from courses offered by the College of Sciences and Engineering	15
Thesis	6
Total semester credit hours required	30

Nonthesis Option

Hours

Designated electives (approved by the chair of the student's advisory committee)	9
Electives chosen from graduate courses offered by the College of Sciences and Engineering	21
CE 5973 Special Project	3
Total semester credit hours required	33

COURSE DESCRIPTIONS CIVIL ENGINEERING (CE)

- 5113 Advanced Structural Analysis**
(3-0) 3 hours credit. Prerequisite: CE 3113 or an equivalent.
Moment distribution, force-deformation relations, stiffness matrix method, prismatic and nonprismatic members, flexibility method, beam column, frame stability, and inelastic effects.
- 5123 Advanced Structural Design**
(3-0) 3 hours credit. Prerequisite: CE 3113, 3213, 3233, or an equivalent.
Structural behavior, design of trusses, funicular structures; cables and arches; members in bending and compression; continuous structures; plate and grid structures; membrane and pneumatic structures; structural systems; and constructional approaches.
- 5213 Industrial Waste Treatment**
(3-0) 3 hours credit. Prerequisite: CE 3633 or consent of instructor.
Survey of industrial wastewater characteristics, biological, chemical and physical treatment processes, selection of appropriate processes, and design principles.
- 5223 Solid Waste Engineering**
(3-0) 3 hours credit. Prerequisite: CE 4623 or consent of instructor.
Basic concepts in planning, designing, and operating solid waste systems, with emphasis placed on state-of-the-art technology and the interrelationship of economic, environmental, and institutional aspects.
- 5233 Topics in Water Quality Control**
(3-0) 3 hours credit. Prerequisite: CE 3633 or an equivalent.
Topic 1: Physical and Chemical Treatment Operations. Physical and chemical unit operations for water and wastewater treatment, with emphasis on treatment process combinations for drinking water supply.
Topic 2: Biological Treatment Operations. Application of principles of biological processes, fluid dynamics, and process engineering to define and solve water and wastewater treatment problems.
Topic 3: Stream Sanitation. Biological impact of pollution on the ecosystems of rivers and streams.

Topic 4: Groundwater Pollution Control. Control approach and transport mechanisms of pollutants in different types of aquifers.
May be repeated for credit as topics vary.

5243 Topics in Environmental Monitoring and Analysis

(2-3) 3 hours credit. Prerequisites: CHE 1303 and CE 3633.

Topic 1: Methods of Environmental Monitoring and Measurement. Functions, terminology, method development, and QA/QC for drinking, ground, and wastewater analysis; soil analysis; and air sampling and analysis, including EPA methods and industrial application.

Topic 2: Unit Process for Water Quality Control. Laboratory and pilot plant studies of physical, chemical, and biological processes for the treatment of wastewaters and sludges.

May be repeated for credit as topics vary.

5273 Hazardous Material Control

(3-0) 3 hours credit. Prerequisite: CE 3663 or consent of instructor.

Analysis of advanced or specialized hazardous waste treatment methods. Emphasis on physical, chemical, and biological processes in treatment of hazardous wastes and processing of treatment residuals. Definitions of problems and objectives and evaluation of alternatives for special cases. Development of concepts for preliminary process design. Design-oriented class project and field trips.

5313 Topics in Water Resource Engineering

(3-0) 3 hours credit. Prerequisite: CE 3713 or an equivalent.

Topic 1: Water Resources Systems Engineering. Applications of engineering systems and analysis techniques to the design of water systems.

Topic 2: Application of water quantity and water quality modeling in water resources planning.

Topic 3: Advanced Surface Water Hydrology. Statistical analysis of hydrologic data, frequency analysis of extreme events, maximum probable precipitation and floods, watershed hydrology, and hydrologic time series.

Topic 4: Advanced Hydraulic Engineering. Open-channel flow, sediment transport, and hydraulics for special structures.

Topic 5: Special Topics in Water Resources. Irrigation engineering, coastal engineering, conjunctive use, regime theories, universal soil loss equation, and other selected topics.

May be repeated for credit as topics vary.

5323 Topics in Construction Management

(3-0) 3 hours credit. Prerequisite: Graduate standing.

Topic 1: Large Project Management. Large engineering project implementation and optimization of manpower, schedule, and material.

Topic 2: Urban Project Management. Application of engineering fundamentals and analysis to urban construction activities.

Topic 3: Site Cleanup and Remediation. Methods of cleanup and remediation of industrial and hazardous waste sites.

Topic 4: Forensic Engineering. Construction responsibilities, risks, and quality control.

May be repeated for credit as topics vary.

5333 Topics in Dynamics of Structures

(3-0) 3 hours credit. Prerequisites: Graduate standing and consent of instructor.

Topic 1: Dynamics of Structures. Fundamentals of structural dynamics; single- and multiple-degrees-of-freedom structural systems; lumped and distributed parameters systems; undamped and damped motions; and response to general dynamic loading.

Topic 2: Advanced Dynamics of Structures. Finite element formulation of dynamics of structural system, reduction of dynamic matrices, numerical methods, response spectrum and time-history analysis, seismic response analysis, and base isolation.

Topic 3: Design of Structures for Dynamic Loads. Static equivalent load design vs. dynamic load design, design of structures for general dynamic loading, seismic design of reinforced concrete and masonry buildings, and base isolation design.

Topic 4: Stability of Structures. Concepts of stability of structures; buckling of columns, beams, beam-columns, rigid frames, and plates; flexural-torsional buckling of columns and beams; design for buckling; and energy and numerical methods.

May be repeated for credit as topics vary.

5343 Topics in Structures

(3-0) 3 hours credit. Prerequisite: Graduate standing and consent of instructor.

Topic 1: Earthquake Engineering. Earthquake characteristics, seismic loads, elastic and inelastic response, analysis and design of buildings for earthquakes.

Topic 2: Advanced Reinforced Concrete Structures. Behavior of reinforced concrete structures and detailing for seismic loads.

Topic 3: Prestressed Concrete. Theory, advantages, and limitations; various systems of prestressing.

Topic 4: Advanced Steel Design. Analysis and design of bolted and welded connections under eccentric and combined loads, stiffened and unstiffened connections, continuous beam-to-column connections, and design of steel buildings.

Topic 5: Design of Shell Structures. Analysis and design of cables, arches, plates, folded plates, domes, shell roofs, and shell walls.

Topic 6: Masonry Design. Material properties; masonry block properties; design of masonry beams, columns, walls, joints, retaining walls, and highrise buildings; construction techniques.

Topic 7: Ductile Behavior of Structures: Ductile behavior of reinforced concrete and steel structures, strength theories of concrete and steel under combined stresses, limit analysis of concrete structures, plastic analysis of steel structures, and yield-line analysis of concrete slabs.

May be repeated for credit as topics vary.

5353 Topics in Geotechnical Engineering

(3-0) 3 hours credit. Prerequisites: CE 3413, graduate standing, and consent of instructor.

Topic 1: Advanced Soil Mechanics. A study of soil constitutive behavior and testing, including nonlinear elastic hyperbolic models, incremental

plasticity, soil chemistry, shear strength, and consolidation theory. Soil testing includes triaxial tests, the direct shear test, and consolidation tests.

Topic 2: Advanced Foundation Engineering. A study of foundation engineering design, including excavation slopes and retaining walls, cofferdams, sheetpile walls, caissons, drilled shafts, piles, settlement control methods, engineered fills, and foundations on expansive soils.

Topic 3: Soil and Site Improvement. A study of techniques available to improve poor soils and marginal construction sites, including lime stabilization, stone columns, deep dynamic compaction, geogrid reinforcement, geotextiles, slurry walls, grouting, construction dewatering, wick drains, and HDPE liners.

Topic 4: Soil Dynamics and Foundation Vibrations. A study of single- and multiple-degree-of-freedom systems, foundation analogs, dynamic soil testing and field measurements, vibration isolation, foundation design, and liquefaction site assessment.

May be repeated for credit as topics vary.

5413 Topics in Civil Engineering

(3-0) 3 hours credit. Prerequisites: Graduate standing and consent of instructor.

Topic 1: Civil Engineering Project Analysis. Planning, implementation, control, and evaluation methods for special civil engineering projects.

Topic 2: Advanced Civil Engineering Technology Transfer. Civil engineering technology development and transfer for real-world problems.

Topic 3: Advanced Civil Engineering Design. Project-oriented design course involving advanced civil engineering knowledge and other engineering expertise.

Topic 4: Topics in Geotechnical Engineering. Advanced soil mechanics, advanced geotechnical engineering, soil mechanics theory, advanced soil testing, soil dynamics, and earthquake engineering.

May be repeated for credit as topics vary.

5513 Topics in Transportation Engineering

(3-0) 3 hours credit. Prerequisite: Graduate standing.

Topic 1: Transportation Systems Design. Multimode transportation networks and systems design methods.

Topic 2: Urban Transit. Planning and implementation of mass transit systems, airports, streets, and highways to satisfy the needs of urban residents and urban-based businesses.

Topic 3: Urban Transportation Engineering. Traffic studies, scheduling and routing, design and construction; economic and environmental impacts.

Topic 4: Pavement Management Systems. Methodologies to evaluate and summarize pavement network conditions and priorities for mainframes.

Topic 5: Pavement Design. Design and analysis of pavement structural systems.

Topic 6: Advanced Geometric Design. Application of geometric design to street and highway projects.

May be repeated for credit as topics vary.

5813 Risk and Decision Analysis in Civil Engineering

(3-0) 3 hours credit. Prerequisite: EGR 3713.

Perspective of risk assessments, risk estimation, event tree analysis, fault tree analysis, risk classifications, risk acceptability, probabilistic modeling, anatomy of risks with revealed preference method, decisions under uncertainties, utility theory, multiattribute utility functions, and case studies.

5923 Topics in Air Pollution Control

(3-0) 3 hours credit. Prerequisite: CE 4643 or consent of instructor.

Topic 1: Air Quality Monitoring and Analysis. Measurement and monitoring methods, including various laboratory and process development procedures.

Topic 2: Air Pollution Control Design. Design principles for pollution control equipment for both gaseous and particulate emissions.

Topic 3: Air Resources. Various types and characteristics of industrial air emissions; survey and control approach.

May be repeated for credit as topics vary.

5973 Special Project

3 hours credit. Prerequisite: Permission in writing (form available) from the instructor and the student's graduate advisor of record.

The directed research course may involve either a laboratory or a theoretical problem. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

5991 Graduate Seminar

(1-0) 1 hour credit. Prerequisites: Graduate standing and consent of instructor. May be repeated for credit up to a limit of 2 credit hours.

6951-3 Independent Study

1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record.

Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the Civil Engineering Graduate Studies Committee to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated for credit as many times as approved by the Civil Engineering Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6971-3 Special Problems

(1-0 to 3-0) 1 to 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when topics vary, but not more than 6 hours, regardless of discipline, may be applied to the master's degree.

6983 Master's Thesis

3 hours credit. Prerequisite: Consent of the Graduate Advisor of Record and thesis director.

Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

Master of Science Degree in Electrical Engineering

The Master of Science degree in Electrical Engineering is designed to offer students the opportunity to prepare for leadership roles in careers with industry, government, or educational institutions. A thesis option is offered for students who want the opportunity to obtain some expertise in research. A nonthesis option is available for students who want a practical industrial applications-oriented degree.

Program Admission Requirements. In addition to satisfying the University-wide graduate admission requirements, applicants for admission as graduate degree-seeking students must meet the following admission requirements:

Unconditional Admission

1. A total score of 1100 or better on the verbal and quantitative portions of the Graduate Record Examination (GRE).
2. A bachelor's degree in electrical engineering from an ABET-accredited institution of higher education.

Conditional Admission

1. Students with electrical engineering undergraduate degrees must have a minimum grade-point average of 2.75 in the last 60 hours and a minimum total score of 1100 on the verbal and quantitative portions of the GRE. Students must take three graduate core courses and earn higher than 3.0 in those courses before unconditional admission to the graduate program is granted.
2. Students with science or other engineering undergraduate degrees must have taken 6 hours (4000-level) of undergraduate electrical engineering courses for graduate credit in lieu of the courses outside of electrical engineering and four of the five graduate core courses in electrical engineering.
 - a. A minimum grade-point average of 3.0 in the last 60 hours and a minimum total score of 1100 on the verbal and quantitative portions of the GRE may result in conditional admission. The Electrical Engineering Graduate Studies Committee may suggest or require a list of undergraduate courses to make up deficiencies in the undergraduate electrical engineering curriculum before

unconditional admission to the graduate program is granted. Courses listed as deficiencies do not count toward the graduate degree.

- b. A minimum grade-point average of 2.75 in the last 60 hours and a minimum total score of 1100 on the verbal and quantitative portions of the GRE may result in conditional admission. Students must take undergraduate courses as specified by the Electrical Engineering Graduate Studies Committee and maintain minimum grades of 3.0 to make up deficiencies in the undergraduate electrical engineering curriculum. Courses listed as deficiencies do not count toward the graduate degree. Upon satisfactory completion of these courses, unconditional admission to the graduate program may be granted.

Applicants with an electrical engineering background who wish to continue their education but do not intend to pursue the Master of Science degree in Electrical Engineering are encouraged to seek admission as special graduate students.

Degree Requirements. The degree requirements for different options are as follows:

- A. The following five core courses form the basis for the program:

EE	5123	Digital Systems
EE	5143	Linear Systems and Control
EE	5153	Random Signals and Noise
EE	5163	Digital Signal Processing
EE	5183	Foundations of Communication Theory

- B. The requirements for each option, with minimum semester-credit-hour requirements and their distribution, are as follows:

<i>Thesis Option</i>	Hours
Core courses (any three)	9
Additional graduate electrical engineering courses*	9
Electives (may be courses from outside electrical engineering)*	6
EE6983 Master's Thesis	6
EE5991 Graduate Seminar	1
Minimum total semester credit hours required	31

<i>Nonthesis Option</i>	Hours
Core courses (any four)	12
Additional graduate electrical engineering courses*	15
Electives (may be courses from outside electrical engineering)*	6
EE5991 Graduate Seminar	1
Minimum total semester credit hours required	34

Degree plans must be consistent with the guidelines established by the Electrical Engineering Graduate Studies Committee. In addition to other University-wide requirements for the master's degree, candidates are required to pass a comprehensive

*Chosen with the approval of the Electrical Engineering Graduate Studies Committee

examination and/or a thesis defense administered by the student's advisory committee, chaired by a tenured or tenure-track graduate faculty member.

COURSE DESCRIPTIONS ELECTRICAL ENGINEERING (EE)

5123 Digital Systems

(3-0) 3 hours credit. Prerequisite: Graduate standing or consent of instructor. Description of digital computer systems, arithmetic algorithms, central processor design, memory hierarchies and virtual memory, control unit and microprogramming, input and output, coprocessors, and multiprocessing.

5143 Linear Systems and Control

(3-0) 3 hours credit. Prerequisite: Graduate standing or consent of instructor. Advanced methods of analysis and synthesis of linear systems, continuous and discrete-time systems, analytical approach to linear control theory.

5153 Random Signals and Noise

(3-0) 3 hours credit. Prerequisite: Graduate standing or consent of instructor. Study of probability theory, random processes, mean and autocorrelation, stationarity and ergodicity, Gaussian and Markov processes, power spectral density, noise, and linear systems.

5163 Digital Signal Processing

(3-0) 3 hours credit. Prerequisite: Graduate standing or consent of instructor. Study of discrete-time signals and systems, including Z-transforms, fast Fourier transforms, and digital filter theory. Filter design and effects of finite register length, and applications to one-dimensional signals.

5183 Foundations of Communication Theory

(3-0) 3 hours credit. Prerequisite: Graduate standing or consent of instructor; EE 5153 suggested.

Basis functions, orthogonalization of signals, vector representation of signals, optimal detection in noise, matched filters, pulse shaping, intersymbol interference, maximum likelihood detection, channel cutoff rates, error probabilities, bandwidth, and power-limited signaling.

5213 Topics in Instrumentation

(2-3) 3 hours credit. Prerequisites: EE 4453 or an equivalent, and EE 5153. Topics may include the following:

Topic 1: Biomedical Systems. Bioinstrumentation for physiological monitoring; biocompatibility.

Topic 2: Automatic Test Equipment. Techniques and standards for ATE; VXIbus, IEEE-488, and SCPI.

Topic 3: Virtual Instruments. Implementation of VI as collection of instrumentation resources.

Topic 4: Silicon Instruments. Techniques for fabricating sensors and signal processing elements into integrated systems.

May be repeated for credit as topics vary.

5223 Topics in Digital Design

(3-0) 3 hours credit. Prerequisites: EE 5123 or consent of instructor.

Topics may include the following:

Topic 1: Switching Theory. Minimization of switching functions, synchronous and asynchronous sequential machines, minimization, reliable design, static hazards, fault detection and location.

Topic 2: High Performance Digital Systems and Parallel Computing. Cache and algorithm design.

Topic 3: RISC Processor Design. RISC concept, RISC versus CISC, RISC advantages and disadvantages, various processors survey, applications. Study of software development tools: assemblers, compilers, simulators, RISC implementations.

Topic 4: Microcomputer-Based Systems. 8- and 16-bit microprocessors, bus timing analysis, interfacing principles, LSI, VLSI chip interfacing. Use of software development tools such as assemblers, compilers, and simulators, and hardware development tools including logic analyzer.

May be repeated for credit as topics vary.

5243 Topics in Control Systems

(3-0) 3 hours credit. Prerequisite: EE 5143.

Topics may include the following:

Topic 1: Adaptive Systems and Control. Current methods in adaptive systems and control including stability, convergence, robustness, system identification, recursive parameter estimation, and design of parameterized controllers.

Topic 2: Multivariable Control Systems. Analysis and design of multivariable feedback systems, stability, performance, and robustness. Techniques may include LQG, Youla parameterization, and Nyquist-like methods.

Topic 3: Optimal Control. Optimal and suboptimal techniques for controller design using the principle of optimality, min-max principles, and induced norm minimization.

Topic 4: Nonlinear Control Systems. Nonlinear systems modeling and control, state-plane analysis, nonlinear stability analysis in time and frequency domains, Lyapunov stability, advanced nonlinear techniques.

May be repeated for credit as topics vary.

5263 Topics in Digital Signal Processing and Digital Filtering

(3-0) 3 hours credit. Prerequisite: EE 5163 or consent of instructor.

Topics may include the following:

Topic 1: Nonlinear Filters. Order statistic filters, morphological filters, stack/Boolean filters, and other related topics.

Topic 2: Adaptive Filtering. Adaptive linear combiners, adaptive lattices, adaptive quadratic methods, and other related topics.

Topic 3: Applications of DSP. Remote sensing, biomedical image analysis, underwater acoustics, video compression and processing, and analysis of biological signals.

Topic 4: Computer Vision. Image perception, parallel and sequential edge detection in the visual system, shape from shading, stereo vision, image segmentation by textural perception in humans, chain codes, B-splines, 3-D representations.

May be repeated for credit as topics vary.

5283 Topics in Communication Systems

(3-0) 3 hours credit. Prerequisite: EE 5183.

Topics may include the following:

Topic 1: Mobile Communications. Multipath-fading channels, diversity reception, the rake receiver, coding for fading channels, cellular networks, traffic capacities, multiaccessing schemes, spread spectrum signaling and code division multiple access, correlation receivers, and multiuser receiver methods.

Topic 2: Digital Communications Systems. Bandwidth and power-efficient signaling, satellite systems, speech coding basics, synchronization, communications networks, spread spectrum methods, fiber optic communications, and networks.

Topic 3: Algebraic Coding Theory. Groups and fields, linear codes, Hamming distance, cyclic codes, minimum distance bounds, BCH codes and algebraic decoding, Reed Solomon (R) codes, Reed-Muller codes and maximum likelihood decoding, suboptimal decoding, and applications of coding.

Topic 4: Probabilistic Coding Theory. Channel capacity, convolutional codes (CC), coding and decoding of CCs, structure of CCs, distance and performance bounds, trellis coded modulation, suboptimum receivers, and advanced topics.

May be repeated for credit as topics vary.

5323 VLSI Design

(3-0) 3 hours credit. Prerequisite: EE 5123 or consent of instructor.

Analysis and design of integrated devices such as Diode, BJT, and MOSFET. Design of LSI and VLSI digital and analog systems incorporating low-level devices and standard libraries. Trade-offs of various fabrication processes. Design automation and verification. Design and verification using VLSI system design tools such as OCTTOOLS, MAGIC, and SPICE.

5343 Intelligent Control and Robotics

(3-0) 3 hours credit. Prerequisite: EE 5143.

Study of artificial neural networks control, knowledge-based control, and fuzzy logic control. Analytical techniques and fundamental principles of robotics; dynamics of robot arms, motion control, robot sensing, and robot intelligence.

5363 Digital Image Processing

(3-0) 3 hours credit. Prerequisite: EE 5163 or consent of instructor.

Study of binary image processing, histogram and point operations, algebraic and geometric image operations, 2-D digital Fourier transforms, convolution, linear and nonlinear filtering, morphological filters, image enhancement, linear image restoration (deconvolution), digital image coding and compression, and digital image analysis.

5383 Digital Information Theory

(3-0) 3 hours credit. Prerequisite: EE 5183.

Entropy and mutual information, Huffman coding, Tunstall coding, Shannon's source coding theorem, channel coding theorems, channel capacity, block coding error bounds, random coding bounds, cutoff rate, multiuser information theory, random access channels and protocols, multiaccess coding methods.

5423 Computer Arithmetics

(3-0) 3 hours credit. Prerequisite: Graduate standing or consent of instructor. Fundamental principles of algorithms for performing arithmetic operations in digital computers. Number systems, fast implementations of arithmetic operations and elementary functions. Design of arithmetic units using CAD tools.

5443 Discrete-Time Control Theory and Design

(3-0) 3 hours credit. Prerequisite: EE 5143. Control theory relevant to deterministic and stochastic analysis and design of computer-controlled systems using both state-space and input-output models.

5463 Artificial Neural Networks

(3-0) 3 hours credit. Prerequisite: EE 5163 or consent of instructor. Study of parallel optimization algorithms using Hopfield networks, perceptrons, backpropagation competitive systems, and other unsupervised techniques.

5483 Probabilistic Coding Theory

(3-0) 3 hours credit. Prerequisite: EE 5183. Groups and rings, convolutional codes, probabilistic maximum-likelihood decoding, bandwidth efficient coding, trellis coded modulation (TCM), lattices and coset codes, trellis decoding of block codes, intersymbol interference channels, and reduced-complexity decoding.

5991 Graduate Seminar

(1-0) 1 hour credit. Prerequisites: Graduate standing and consent of instructor. The grade report for the course is either CR (satisfactory performance) or NC (unsatisfactory performance).

6323 Advanced Topics in Computers

(3-0) 3 hours credit. Prerequisite: Consent of Graduate Advisor of Record and Dissertation Director. Current topics in the computer area. May be repeated for credit as topics vary.

6343 Advanced Topics in Control

(3-0) 3 hours credit. Prerequisite: Consent of Graduate Advisor of Record and Dissertation Director. Current topics in the control area. May be repeated for credit as topics vary.

6363 Advanced Topics in Signal Processing

(3-0) 3 hours credit. Prerequisite: Consent of Graduate Advisor of Record and Dissertation Director. Current topics in the signal processing area. May be repeated for credit as topics vary.

6383 Advanced Topics in Communications

(3-0) 3 hours credit. Prerequisite: Consent of Graduate Advisor of Record and Dissertation Director. Current topics in the communications area. May be repeated for credit as topics vary.

6951-3 Independent Study

1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the Graduate Advisor of Record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the Electrical Engineering Graduate Studies Committee to take the Comprehensive Examination. Independent study course for the purpose of taking the Comprehensive Examination. May be repeated for credit as many times as approved by the Electrical Engineering Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6971-3 Special Problems

(1-0 to 3-0) 1 to 3 hours credit. Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when topics vary, but not more than 6 hours, regardless of discipline, may be applied to the master's degree.

6983 Master's Thesis

3 hours credit. Prerequisite: Consent of the Graduate Advisor of Record and thesis director. Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

Master of Science Degree in Mechanical Engineering

The Master of Science program in Mechanical Engineering is designed to offer students the opportunity to prepare for leadership roles in careers with industry, government, or educational institutions. A thesis option is offered for students who want the opportunity for research. A nonthesis option is available for students who want additional professional engineering education.

Program Admission Requirements. In addition to satisfying the University-wide graduate admission requirements, applicants must meet the following:

1. Minimum scores of 400 on the verbal portion and 600 on the quantitative portion of the Graduate Record Examination.
2. A bachelor's degree in mechanical engineering or a closely related field from an accredited institution of higher education, or proof of equivalent training at a foreign or unaccredited institution

An applicant who does not qualify for unconditional admission may be admitted on a conditional basis as determined by the Master of Science in Mechanical Engineering Admission Committee. Applicants with a degree in a discipline other than mechanical engineering may be required to make up the deficiencies in the undergraduate mechanical engineering curriculum before unconditional admission to the graduate program is granted. Courses listed as deficiencies do not count toward the graduate degree.

Applicants with a mechanical engineering background who wish to continue their education but do not intend to pursue a Master of Science degree in Mechanical Engineering are encouraged to seek admission as special graduate students.

Degree Requirements. The minimum number of semester credit hours required for the degree, excluding required coursework to remove admission deficiencies, is 30 for the thesis option and 36 for the nonthesis option.

- A. Degree candidates must complete the following 6 semester credit hours of core courses within the first 18 hours of graduate coursework:

EGR 5013	Analytic Techniques in Engineering Analysis
EGR 5023	Numerical Techniques in Engineering Analysis

- B. Degree candidates must complete the following course requirements for one of the degree options:

<i>Thesis Option</i>	Hours
EGR 5013 Analytic Techniques in Engineering Analysis	3
EGR 5023 Numerical Techniques in Engineering Analysis	3
Designated electives (approved by the student's advisory committee chair)	18
Master's Thesis	6
Minimum total semester credit hours required	30

<i>Nonthesis Option</i>	Hours
EGR 5013 Analytic Techniques in Engineering Analysis	3
EGR 5023 Numerical Techniques in Engineering Analysis	3
Designated electives (approved by the student's advisory committee chair)	30
Minimum total semester credit hours required	36

In addition to the coursework and other University requirements for the master's degree, candidates must pass a comprehensive examination or a thesis defense administered by the student's advisory committee, chaired by a full-time graduate faculty member. A successful thesis defense satisfies the comprehensive exam requirement. Candidates for a nonthesis degree must pass a written and oral comprehensive exam. No more than two attempts will be allowed to pass the comprehensive exam.

Degree-seeking students must select a major advisor and a graduate advisory committee (with a minimum of three members) in the first 12 hours of graduate coursework. The chair of the student's advisory committee, who must be a full-time member of the graduate faculty, is the student's primary advisor. Within the first 12 hours of graduate coursework, degree candidates must meet with the committee chair to develop a degree plan for their program of study. New students who have not selected a graduate advisory committee should seek advice from the Graduate Advisor of Record on course selection during the first semester.

COURSE DESCRIPTIONS MECHANICAL ENGINEERING (ME)

- 5013 Topics in Mechanical Engineering**
(3-0) 3 hours credit. Prerequisite: Graduate standing in engineering or consent of instructor.
Current topics in mechanical engineering. May be repeated for credit as topics vary.
- 5143 Advanced Dynamics**
(3-0) 3 hours credit. Prerequisites: ME 3323 or an equivalent, and ME 3423 or an equivalent.
Analytical dynamics, including Newton-Euler, Lagrange, and Hamilton's principles; gyroscopic effects; stability.
- 5153 Structural Dynamics**
(3-0) 3 hours credit. Prerequisites: ME 3323 or an equivalent, and ME 3423 or an equivalent.
Matrix methods for analysis of dynamics of complex structures, computer solutions, systems identifications, and experimental model analysis.
- 5163 Dynamics of Rotating Machinery**
(3-0) 3 hours credit. ME 3323 or an equivalent, and ME 3423 or an equivalent.
Dynamic stability, critical speeds, and unbalanced response of rotor-bearing systems; operation through and above critical speeds.
- 5173 Nonlinear Systems and Chaos**
(3-0) 3 hours credit. Prerequisites: ME 3323 or an equivalent, and ME 3423 or an equivalent.
Phase-space representation, local and global stability, time and frequency domain characterization, and applications to oscillatory systems in various engineering disciplines.
- 5243 Advanced Thermodynamics**
(3-0) 3 hours credit. Prerequisite: ME 3293 or an equivalent.
Concepts and postulates of macroscopic thermodynamics; formulation of thermodynamic principles; stability of thermodynamic systems.

5253 Thermodynamics of Materials

(3-0) 3 hours credit. Prerequisite: ME 3293 or an equivalent.

Phase equilibria, solutions, phase rule, phase diagrams, defects in solids, surfaces and interfaces, diffusion, and transformations.

5303 Advanced Heat and Mass Transfer

(3-0) 3 hours credit. Prerequisite: Graduate standing in engineering or consent of instructor.

Derivation of energy and mass conservation equations with constitutive laws for conduction, convection, radiation and mass diffusion. Dimensional analysis, heat exchangers, boiling and condensation, steady and transient solutions.

5333 Conduction

(3-0) 3 hours credit. Prerequisite: ME 4313 or an equivalent.

Derivation of governing equations, steady and transient solutions, variable property effects, numerical methods.

5343 Convection

(3-0) 3 hours credit. Prerequisite: ME 4313 or an equivalent.

Derivation of equations of convection of mass, momentum, and energy; scale analysis; boundary layer solutions; classical, laminar convection problems; turbulent convection.

5353 Radiation

(3-0) 3 hours credit. Prerequisite: ME 4313 or an equivalent.

Thermal radiation laws; geometric factors, black bodies; gray enclosures; nongray systems; combined conduction, convection, and radiation.

5363 Mass Transfer

(3-0) 3 hours credit. Prerequisite: Graduate standing in engineering or consent of instructor.

Conservation principles, constitutive laws, diffusion, porosity, permeability, retardation, and dispersion. Single- and multiphase flow under isothermal and nonisothermal conditions.

5423 Mechanical Vibrations

(3-0) 3 hours credit. Prerequisites: ME 4513 or an equivalent, and ME 3423 or an equivalent.

Dynamics of high-order lumped-component systems, model testing, system identification, design and control; approximate methods.

5433 Nonlinear Vibrations

(3-0) 3 hours credit. Prerequisites: ME 4513 or an equivalent, and ME 3423 or an equivalent.

Classic methods in nonlinear analysis; modern techniques for analysis of deterministic and chaotic behavior.

- 5443 Random Vibrations**
(3-0) 3 hours credit. Prerequisite: ME 4513 or an equivalent, and ME 3423 or an equivalent.
Randomly excited mechanical systems and structures; stationary and ergodic processes; first passage and fatigue failures; data analysis techniques.
- 5513 Advanced Mechanism Design**
(3-0) 3 hours credit. Prerequisite: Graduate standing in engineering.
Advanced topics in kinematic synthesis of linkage, static and dynamic force analyses, and computer-aided design of mechanisms.
- 5533 Advanced Machine Design**
(3-0) 3 hours credit. Prerequisite: Graduate standing in engineering.
Advanced problems in machine design, including bearings, brakes and clutches, gears, shafts, springs; advanced stress analysis.
- 5543 Probabilistic Engineering Design**
(3-0) 3 hours credit. Prerequisite: Graduate standing in engineering.
Stochastic methods in mechanical engineering design; probability density generation, probabilistic analysis, and random processes.
- 5553 Advanced Design of Cams and Gears**
(3-0) 3 hours credit. Prerequisite: Graduate standing in engineering.
Advanced problems in design of cam follower systems; gear trains and spur, helical, bevel, and worm gears.
- 5613 Advanced Fluid Mechanics**
(3-0) 3 hours credit. Prerequisite: ME 3663 or an equivalent.
Dynamics of incompressible fluid mechanics viscous flow; Navier-Stokes equations; boundary layer theory; and numerical operations for incompressible fluid flow.
- 5623 Two-Phase Flow**
(3-0) 3 hours credit. Prerequisites: ME 3663 or an equivalent, and ME 4313 or an equivalent.
Basic treatment of two-phase flow; detailed analysis of flow of suspended particles, bubbles, and mists; analysis of slug and annular flows; measurement techniques.
- 5633 Gas Dynamics**
(3-0) 3 hours credit. Prerequisite: ME 3663 or an equivalent.
Integral and differential forms of the conservation equations, one-dimensional flow, oblique shock and expansion waves, and supersonic, transonic, and hypersonic flows.
- 5643 Boundary Layer Theory**
(3-0) 3 hours credit. Prerequisite: ME 3663 or an equivalent.
Viscous flow, integral and differential equations of motion, and exact and numerical solutions for laminar and turbulent flows.

5653 Computational Fluid Dynamics

(3-0) 3 hours credit. Prerequisite: ME 3663 or an equivalent.

The mathematical models for fluid-flow simulations at various levels of approximation, basic description techniques, and the nature of flow equations and their boundary conditions.

5683 Advanced Design of Thermal and Fluid Systems

(3-0) 3 hours credit. Prerequisites: ME 3663 or an equivalent, and EE 4313 or an equivalent.

Development of energy systems, power systems, and the mechanics of combustion.

5713 Mechanical Behavior of Materials

(3-0) 3 hours credit. Prerequisite: ME 2243 or an equivalent, or consent of instructor.

Mechanical behavior of engineering materials (metals, alloys, ceramics, and polymers) elasticity, dislocation theory, strengthening mechanism, fracture, fatigue, creep, and oxidation.

5723 Materials Characterization

(3-0) 3 hours credit. Prerequisite: ME 2243 or an equivalent, or consent of instructor.

Basic theory and application of techniques used to characterize engineering materials. Techniques discussed include X-ray diffraction (XRD), scanning electron microscopy (SEM), transmission electron spectroscopy (SIMS), and thermal analysis. Practice demonstrations and projects.

5973 Special Project

3 hours credit. Prerequisite: Permission in writing (form available) from the instructor and the student's graduate advisor of record.

The directed research course may involve either a laboratory or a theoretical problem. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

5991 Graduate Seminar

(1-0) 1 hour credit. Prerequisites: Graduate standing and consent of instructor. May be repeated for credit up to a limit of 2 hours.

6951-3 Independent Study

1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record.

Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the Mechanical Engineering Graduate Studies Committee to take the Comprehensive Examination.

Independent study for the purpose of taking the Comprehensive Examination. May be repeated for credit as many times as approved by the Mechanical Engineering Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6971-3 Special Problems

(1-0 to 3-0) 1 to 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when topics vary, but not more than 6 hours, regardless of discipline, may be applied to the master's degree.

6983 Master's Thesis

3 hours credit. Prerequisite: Consent of the Graduate Advisor of Record and thesis director.

Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

DIVISION OF LIFE SCIENCES

Master of Science Degree in Biology

The graduate program offers opportunities for advanced study and research leading to the Master of Science degree in Biology. A thesis option is offered to students who want an opportunity to develop expertise in research techniques and data analysis; a nonthesis option is offered for those who want the opportunity to earn the master of science degree primarily through organized coursework. The thesis option is recommended for students who plan a career in research or contemplate pursuing a doctorate in one of the life sciences. The nonthesis option might be suitable for students interested in secondary school teaching in the life sciences.

Graduate faculty research interests include biochemistry, cellular biology, developmental biology, ecology, genetics, microbiology, neurobiology, physiology, and plant sciences. The multidisciplinary nature of the program also allows students the opportunity to broaden their educational background at the graduate level. Individual programs are organized around each student's interests in consultation with the student's graduate advisor.

Qualified students are encouraged to apply for teaching assistantships and fellowships. Requests should be sent to the Director of the Division of Life Sciences when application is made for admission to UTSA.

Program Admission Requirements. In addition to satisfying the University-wide graduate admission requirements, applicants are expected to have completed an undergraduate major in one of the biological sciences, with coursework comparable to that required for the B.S. in Biology at UTSA. Students whose undergraduate preparation is deficient in certain areas but who meet the minimum University standards for admission may be conditionally admitted and required to complete specific undergraduate or graduate courses as conditions of admission. In such cases, students should anticipate that additional time will be required to complete the degree. To be considered for degree-seeking status, applicants must submit two letters of recommendation to the Graduate Studies Committee Chair in the Division of Life Sciences; they must also submit scores from the Graduate Record Examination with their application. A total of 1000 on the verbal and quantitative sections of the general test is required, but exceptions may be made depending on grade-point average and letters of recommendation.

Degree Requirements. Degree candidates are required to complete a minimum of 36 semester credit hours approved by the student's graduate advisor of record. These hours are subject to the following conditions:

1. A minimum of 18 semester hours of graduate credit in organized classes must be earned within the division. This may include up to 6 semester credit hours of approved upper-division undergraduate coursework and a maximum of 3 semester credit hours in a graduate seminar (BIO 7051).
2. An additional 18 semester hours of graduate credit as approved by the Graduate Advisor of Record. This may include a maximum of 6 hours of BIO 5973 Directed Research. For students electing the nonthesis option, a minimum of 3 semester credit hours of BIO 5973 must be included. Students electing the thesis option

must complete 6 semester credit hours of BIO 6983 Master's Thesis as part of this total.

Comprehensive Examination. As specified by University regulations, candidates must pass a comprehensive examination administered by their graduate committee. This exam is normally given in the semester before the semester during which degree requirements are to be completed. Certain rules must be adhered to concerning the composition of the Master's Thesis Committee and the Master's Comprehensive Examination Committee. Only tenured or tenure-track faculty members can chair these committees, and no more than one member of either committee can be a nontenured or nontenure-track faculty member, or be from another university. Students electing the thesis option must successfully defend their thesis research before their graduate committee prior to the submission of the thesis to the Dean of Graduate Studies for approval.

Master of Science Degree in Biotechnology

The Master of Science degree in Biotechnology offers opportunities for advanced study and research related to the rapidly developing field of applied biology. A broad common base of knowledge for biotechnology is provided in the master's degree by a comprehensive core curriculum that encompasses key areas in biology, computer science, and statistics. Additional coursework is selected from one of two concentrations, from which specialized courses may be chosen. These concentrations are molecular neurobiology and bioprocessing technology. The opportunity to develop additional technical expertise is also available through directed research.

Program Admission Requirements. In addition to satisfying the University-wide graduate requirements, applicants are expected to have completed an undergraduate major in the sciences with coursework comparable to the core required for the B.S. in Biology at UTSA. Students must also have completed courses equivalent to BIO 3713, 3722 Microbiology and Laboratory and CS 1073 Introductory Computer Programming for Scientific Applications. Students whose undergraduate preparation is deficient in certain areas but who meet the minimum University standards for admission may be conditionally admitted and required to complete specific undergraduate or graduate courses as conditions of admission. Courses listed as deficiencies do not count toward the graduate degree. In such cases, students should anticipate that additional time will be required to complete the degree. To be considered for degree-seeking status, applicants must submit two letters of recommendation to the Graduate Studies Committee Chair in the Division of Life Sciences; they must also submit scores from the Graduate Record Examination with their application. A total of 1000 on the verbal and quantitative sections of the general test is required, but exceptions may be made depending on grade-point average and letters of recommendation.

Program of Study

A. Biotechnology core curriculum (18 semester credit hours):

BIO	5353	Molecular and Biochemical Genetics
BIO	6803	Advanced Immunology and Immunochemistry
BIO	7051	Seminar in Life Sciences (must be repeated three times)

BIO	7513	Advanced Biochemistry
BIO	7643	Cellular and Molecular Biology
STA	5073	Methods of Statistics I

- B. Biotechnology electives. Each student must complete 18 semester credit hours of biotechnology electives, at least 9 of which must be selected from a single concentration:

Concentration 1: Molecular Neurobiology

BIO	5423	Neuroanatomy
BIO	5433	Neurophysiology
BIO	5443	Neurochemistry
BIO	5523	Enzymes
BIO	5563	Biochemical Macromolecules
BIO	5833	Membrane Structure and Function
BIO	7571-3	Experimental Techniques in the Life Sciences

Concentration 2: Bioprocessing Technology

BIO	5363	Microbial Genetics
BIO	5523	Enzymes
BIO	5563	Biochemical Macromolecules
BIO	6553	Fermentation Science
BIO	6563	Food Science and Technology
BIO	6873	Microbial Physiology and Energetics
BIO	7571-3	Experimental Techniques in the Life Sciences–Monoclonal Antibodies and Flow Cytometry
BIO	7571-3	Experimental Techniques in the Life Sciences–Recombinant DNA
BIO	7571-3	Experimental Techniques in the Life Sciences–Tissue Culture and Somatic Cell Genetics

- C. Directed research. Students may elect to develop expertise in research techniques in a selected emphasis on biotechnology through BIO 5973 Directed Research
- D. Master's thesis option. Students electing the thesis option must complete 6 semester credit hours of BIO 6983 Master's Thesis

Comprehensive Examination. As specified by University regulations, degree candidates must pass a comprehensive examination administered by their graduate committee. This exam is normally given in the semester before the semester during which degree requirements are to be completed. Certain rules must be adhered to concerning the composition of the Master's Thesis Committee and the Master's Comprehensive Examination Committee. Only tenured or tenure-track faculty members can chair these committees, and no more than one member of either committee can be a nontenured or nontenure-track faculty member, or be from another university. The examination is normally given in the semester before the semester during which the degree requirements are to be completed. Students electing the thesis option must successfully defend their thesis research before their graduate committee before the submission of the thesis to the Dean of Graduate Studies for approval.

Doctor of Philosophy Degree in Biology

The Division of Life Sciences offers opportunities for advanced study and research leading to the Doctor of Philosophy degree in Biology. The degree program has emphases in molecular and cellular neurobiology. The Ph.D. in Biology is awarded to candidates who have displayed an in-depth understanding of the subject matter and demonstrated the ability to make an original contribution to knowledge in their field of specialty.

The regulations for this degree comply with the general University regulations (refer to chapter 5, General Academic Regulations, and chapter 7, Doctoral Degree Regulations).

Admission Requirements. Applicants must have a B.A. or a B.S. degree from an accredited university and a minimum grade-point average of 3.0 in upper-division and graduate work, preferably in biology. They should also have a minimum combined score on the verbal and quantitative portions of the Graduate Record Examination of 1000. Exceptions can be made in cases with a strong justification (e.g., high grade-point average and/or extensive research experience). Applicants whose native language is not English must score at least 550 on the TOEFL. The Doctoral Studies Committee, comprised of members selected from the graduate faculty, is responsible for advising students. Admission requires appointment to a teaching assistantship, research assistantship, or research fellowship.

Degree Requirements. The degree requires a minimum of 90 semester credit hours beyond the baccalaureate degree. The core curriculum consists of 30 semester credit hours of formal coursework, including elective courses that support the emphasis in neurobiology, and required teaching, research, and completion of the dissertation following advancement to candidacy. Enrollment in the Life Sciences Colloquium and Seminar in Life Sciences is required each semester of enrollment and may be taken for a maximum combined total of 27 semester credit hours. A minimum of 36 semester credit hours in doctoral research, including 12 hours for the doctoral dissertation, must be completed. Any grade lower than "B" in a graduate course or in remediating coursework at the undergraduate level will not count toward the 90 hours. Students matriculating with a master's degree may use up to 30 semester credit hours toward the degree provided the courses are comparable to core and elective courses.

Program of Study

A. Core curriculum (22 semester credit hours required):

BIO	7113	Teaching in Life Sciences
BIO	7121	Neurobiology Fundamentals: Neurochemistry
BIO	7131	Neurobiology Fundamentals: Behavioral Neurobiology
BIO	7141	Neurobiology Fundamentals: Cellular and Molecular Neurobiology
BIO	7151	Neurobiology Fundamentals: Neurophysiology
BIO	7161	Neurobiology Fundamentals: Computational Neurobiology
BIO	7171	Neurobiology Fundamentals: Neuroanatomy
BIO	7181	Neurobiology Fundamentals: Neuropharmacology
BIO	7413	Research Ethics and Responsible Conduct in Research
BIO	7513	Advanced Biochemistry

BIO	7573	Experimental Techniques in the Life Sciences
BIO	7643	Cellular and Molecular Biology

B. Colloquia and seminars (27 semester credit hours maximum):

BIO	7041	Life Sciences Colloquium
BIO	7051	Seminar in Life Sciences

C. Doctoral research (36 semester credit hours minimum):

BIO	7211-3	Doctoral Research (24 hours minimum)
BIO	7311-3	Doctoral Dissertation (12 hours minimum)

D. Electives (15 semester credit hours minimum):

BIO	5423	Neuroanatomy
BIO	5433	Neurophysiology
BIO	5443	Neurochemistry
BIO	5453	Neuroendocrinology
BIO	5503	Sensory Physiology
BIO	5543	Pharmacology and Toxicology
BIO	5833	Membrane Structure and Function
BIO	6803	Advanced Immunology and Immunochemistry

The entire program of study must be approved by the student's dissertation advisor, dissertation committee, and doctoral studies committee and must be submitted to the Dean of Graduate Studies for final approval.

Advancement to Candidacy. Advancement to candidacy requires a student to complete University and program requirements and to pass written and oral qualifying examinations following completion of course requirements. The examination is administered by the Doctoral Studies Committee and is conducted by the Dissertation Committee as outlined below. No more than two attempts to pass qualifying examinations are allowed. Results of the written and oral examinations must be reported to the Doctoral Studies Committee and the Dean of Graduate Studies. Admission into the doctoral program does not guarantee advancement to candidacy.

Dissertation. Candidates must demonstrate their ability to conduct independent research by completing and defending an original dissertation. The research topic is determined by the student in consultation with his or her supervising professor. A dissertation committee selected by the student and supervising professor and approved by the Dean of the College and the Dean of Graduate Studies guides and critiques the candidate's research. The Dissertation Committee must approve the completed dissertation.

Final Oral Examination. Following an open presentation of the dissertation findings, the Dissertation Committee conducts a closed oral examination dealing primarily with the relation of the dissertation to the general field of specialty. Results of the oral examination must be reported to the Dean of Graduate Studies. Awarding of the degree is based on the approval of the Dissertation Committee, approved by the Dean of Graduate Studies. The Dean of Graduate Studies certifies the completion of all University-wide requirements.

COURSE DESCRIPTIONS BIOLOGY (BIO)

5013 Survey of Environmental Sciences

(3-0) 3 hours credit. Prerequisite: Graduate standing.

An integrative examination of living and nonliving environmental systems. A detailed study of interrelationships among plants, animals, and the environment, addressing the chemical, physical, and biological properties of living system, and the principles that drive their evolution.

5023 Molecular and Genetic Bases of Living Systems

(3-0) 3 hours credit. Prerequisite: Graduate standing.

A comprehensive survey of modern principles of quantitative, molecular, and cell biology. An integrated examination of the biochemical, biophysical, and genetic properties of procaryotic and eukaryotic cells and multicellular organisms.

5243 Advanced Plant Ecology

(3-0) 3 hours credit. Prerequisites: BIO 3283, BIO 3292, or consent of instructor.

A study of the major biomes of the world, including North America and Texas, and the factors that influence the development of these biomes. Special consideration is given to species interactions that lead to high and low density species.

5263 Microbial Ecology

(3-0) 3 hours credit. Prerequisite: BIO 3713 or consent of instructor.

Interrelationships between microorganisms and their environment, including natural habitats of microorganisms, normal human flora, and pathogens. Special consideration is given to application of genetically engineering microorganisms for environmental problems.

5313 Cytogenetics

(3-0) 3 hours credit. Prerequisite: BIO 2313 or an equivalent.

An analysis of chromosome structure and function, gene location, crossing-over, and variations in chromosome structure and number.

5333 Advanced Population Genetics

(3-0) 3 hours credit. Prerequisites: BIO 2313 and BIO 2322, or their equivalents. Biostatistics highly recommended.

An experimental approach to the interaction of genotype and environment in populations, with emphasis on mutagenesis, selection, polymorphism, and adaptive mechanisms.

5353 Molecular and Biochemical Genetics

(3-0) 3 hours credit. Prerequisites: BIO 2313 and BIO 3513, or their equivalents.

Molecular and biochemical aspects of structure, replication, mutation, and phenotypic expression of genetic material.

- 5363 Microbial Genetics**
(3-0) 3 hours credit. Prerequisites: BIO 2313 and BIO 3713, or their equivalents.
A study of bacterial, fungal, and viral genetics. Emphasis on the current literature, data interpretation, and experimental techniques.
- 5403 Advanced Comparative Animal Physiology**
(3-0) 3 hours credit. Prerequisite: BIO 4353 or an equivalent.
Physiology of the organs and organ systems of animals.
- 5423 Neuroanatomy**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
The anatomy of the vertebrate nervous system.
- 5433 Neurophysiology**
(3-0) 3 hours credit. Prerequisite: BIO 4353 or an equivalent.
Physiology of the nervous system. Emphasis on sensory and motor systems and neural correlations of behavior.
- 5443 Neurochemistry**
(3-0) 3 hours credit. Prerequisites: BIO 3513, 3522, and 4433.
An examination of basic biochemical phenomena involved in normal neural processes and some pathological changes associated with neurobiological diseases and disorders.
- 5453 Neuroendocrinology**
(3-0) 3 hours credit. Prerequisites: BIO 3813 and 4433.
Anatomical and molecular neurobiology of the endocrine hypothalamus and associated organs. Morphological, cell biological, and feedback mechanisms of endocrine regulation are emphasized.
- 5463 Reproductive Biology**
(3-0) 3 hours credit. Prerequisites: Courses in organ physiology and endocrinology or consent of instructor.
A comparative study of mammalian reproduction with emphasis on vertebrate/mammalian reproduction, including cellular and systems mechanisms, hormonal regulation, and the effects of environmental factors.
- 5503 Sensory Physiology**
(3-0) 3 hours credit. Prerequisite: BIO 4433 or consent of instructor.
Principles of sensory physiology, including sensory transduction and central processing of sensory information in vertebrate and invertebrate species.
- 5523 Enzymes**
(3-0) 3 hours credit. Prerequisite: BIO 3513 or an equivalent.
A study of enzyme structure and mechanism, inhibitors, cofactor, kinetics, and regulation.

- 5543 Pharmacology and Toxicology**
(3-0) 3 hours credit. Prerequisites: BIO 3513, 3522, 3413, and 3422.
A review of the beneficial, adverse, and toxic reactions of individuals to a variety of drugs and environmental substances. Chemical, biochemical, pharmacological, toxicological, genetic, teratogenic, and pathological aspects are examined.
- 5563 Biochemical Macromolecules**
(3-0) 3 hours credit. Prerequisite: BIO 3513 or an equivalent.
Structure, function, and isolation of macromolecules. Emphasis is on nucleic acids and proteins and their interactions.
- 5583 Neuroparmacology**
(3-0) 3 hours credit. Prerequisites: Graduate standing in the life sciences.
A study of drugs that affect nervous tissue, specifically those affecting the brain and autonomic nervous system.
- 5633 Cytodifferentiation**
(3-0) 3 hours credit. Prerequisite: Graduate standing in the life sciences.
Detailed study of selected areas of developmental biology relating to cellular differentiation, including nuclear-cytoplasmic interactions, induction, and reversibility of differentiation.
- 5743 Biochemical Virology**
(3-0) 3 hours credit. Prerequisite: Graduate standing in the life sciences.
A detailed study of the diversity of viruses and biochemical mechanisms for their replication.
- 5833 Membrane Structure and Function**
(3-0) 3 hours credit. Prerequisite: BIO 3513 or an equivalent.
A study of the composition, organization, transport functions, and permeability of natural and model membranes.
- 5971-3 Directed Research**
1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record.
The directed research course may involve either a laboratory or a theoretical problem. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.
- 6113 Advanced Plant Physiology**
(3-0) 3 hours credit. Prerequisite: BIO 4603 or consent of instructor.
Principles of plant physiology and biochemistry, with particular emphasis on plant hormones, nitrogen fixation, plant respiration, photosynthesis, and current research work.
- 6133 Methods in Field Biology**
(3-0) 3 hours credit. Prerequisite: BIO 3283 or an equivalent.
Examination of techniques to collect, identify, and preserve plants and animals. Field methods used in the analysis of populations and communities are considered.

- 6213 Advanced Ecology**
(3-0) 3 hours credit. Prerequisite: BIO 3283 or an equivalent.
Interaction of organisms with their environment, allelopathy, competition, distribution, succession, and factors that control growth and dispersal. Special consideration is given to the concepts of climax, succession, and land management.
- 6373 Invertebrate Physiology**
(3-0) 3 hours credit. Prerequisite: BIO 3413.
An investigation of the mechanisms of respiration, movement, ion and water regulation, and hormonal integration in the invertebrates.
- 6483 Animal Behavior**
(3-0) 3 hours credit. Prerequisite: BIO 3413 or consent of instructor.
An examination of neural, endocrine, genetic, and environmental determinants of behavior.
- 6553 Fermentation Science**
(3-0) 3 hours credit. Prerequisites: BIO 3713 and 3722, or their equivalents.
The principles and theory underlying industrial fermentations, such as vessel design and construction, media design, upscaling fermentations, process control, and product isolation.
- 6563 Food Science and Technology**
(3-0) 3 hours credit. Prerequisites: BIO 3713 and 3722, or their equivalents.
The science underlying industrial processes related to foods. The latest applications of technologies such as strain isolation and improvement, raw material selection and storage, process monitoring, and the assessment of chemical and microbiological status of products.
- 6663 Experimental Parasitology**
(3-0) 3 hours credit. Prerequisite: A course in parasitology or consent of instructor.
A study of animal parasites, with special emphasis on the physiology of host-parasite interactions.
- 6773 Host-Parasite Interactions**
(3-0) 3 hours credit. Prerequisite: BIO 3713 or consent of instructor.
A study of infectious disease processes, with emphasis on host-parasite relationships of selected microbial pathogens.
- 6803 Advanced Immunology and Immunochemistry**
(3-0) 3 hours credit. Prerequisite: BIO 4743 or consent of instructor.
The study of current concepts of humoral and cell-mediated immunity, with emphasis on molecular mechanisms.
- 6823 Molecular Radiation Biology**
(3-0) 3 hours credit. Prerequisite: BIO 3513 or consent of instructor.
A study of biological effects of ionizing and nonionizing radiation, with emphasis on repair mechanisms of radiation damage at the cellular and subcellular level. Applications in cancer therapy are included.

6873 Microbial Physiology and Energetics

(3-0) 3 hours credit. Prerequisite: BIO 3713 or consent of instructor.

Consideration of physiological activities of microorganisms, with special emphasis on metabolic capabilities of bacteria and other microorganisms.

6951-3 Independent Study

1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the appropriate graduate studies committee to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. This course may be repeated for credit when the topics vary, but not more than 6 hours, regardless of discipline, may be applied to the master's degree.

6983 Master's Thesis

3 hours credit. Prerequisites: Permission of the Graduate Advisor and thesis director.

Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

7041 Life Sciences Colloquium

(1-0) 1 hour credit. Prerequisite: Graduate standing.

Discussions of current journal articles, reviews, and recent advances in specialized areas of the biological sciences. May be repeated for credit as topics vary. The grade report for this course is either CR (satisfactory participation in the colloquium) or NC (unsatisfactory participation in the colloquium). (Formerly BIO 5041.)

7051 Seminar in Life Sciences

(1-0) 1 hour credit. Prerequisite: Graduate standing.

Formal presentations of research by outside authorities in the biological sciences. May be repeated for credit. The grade report for this course is either CR (satisfactory participation in the seminar) or NC (unsatisfactory participation in the seminar).

7113 Supervised Teaching in Life Sciences

3 hours credit. Prerequisite: Admission to candidacy for the doctoral degree. May be repeated for credit.

7121 Neurobiology Fundamentals: Neurochemistry

(1-0) 1 hour credit. Prerequisite: Admission to the doctoral program in biology.

A survey of neurotransmission, emphasizing biochemical, neuroanalytical, and neuropathological aspects of major neurotransmitter systems in the central nervous system.

7131 Neurobiology Fundamentals: Behavioral Neurobiology

(1-0) 1 hour credit. Prerequisite: Admission to the doctoral program in biology.

A survey of approaches to addressing the relation of brain function and structure to behavior, with an emphasis on recent studies utilizing novel neuroscientific methods used in conjunction with behavioral analysis.

7141 Neurobiology Fundamentals: Cellular and Molecular Neurobiology

(1-0) 1 hour credit. Prerequisite: Admission to the doctoral program in biology.

The cellular and molecular organization and function of neurons will be reviewed. Both in vivo and in vitro molecular and cellular techniques used to study neurobiology will be covered.

7151 Neurobiology Fundamentals: Neurophysiology

(1-0) 1 hour credit. Prerequisite: Admission to the doctoral program in biology.

An introduction to the basic principles underlying neuronal function, including membrane biophysics, action potentials, and synaptic transmission.

7161 Neurobiology Fundamentals: Computational Neurobiology

(1-0) 1 hour credit. Prerequisite: Admission to the doctoral program in biology.

A survey of computational processing in single neurons, artificial neural networks, and biological neural systems.

7171 Neurobiology Fundamentals: Neuroanatomy

(1-0) 1 hour credit. Prerequisite: Admission to the doctoral program in biology.

An introduction to the anatomical and functional arrangements of the vertebrate central and peripheral nervous system, including the major sensory and motor circuitry.

- 7181 Neurobiology Fundamentals: Neuropharmacology**
 (1-0) 1 hour credit. Prerequisite: Admission to the doctoral program in biology.
 An advanced review and discussion of the mechanisms of drug action in the nervous system, with an emphasis on synaptic function; neurotransmitter synthesis, release and metabolism, receptor and channel interactions, and the modulation of second messenger systems.
- 7211-3 Doctoral Research**
 1 to 3 hours credit. Prerequisite: Admission to candidacy for the doctoral degree.
 May be repeated for credit, but no more than 24 hours may be applied to the doctoral degree.
- 7311-3 Doctoral Dissertation**
 1 to 3 hours credit. Prerequisite: Admission to candidacy for the doctoral degree and completion of at least 21 hours of BIO 7211-3.
 May be repeated for credit, but no more than 12 hours may be applied to the doctoral degree.
- 7413 Research Ethics and Responsible Conduct in Research**
 (3-0) 3 hours credit.
 A case-study approach to formal training in the responsible conduct of research. Includes areas of conflict of interest, responsible authorship, policies for handling misconduct, policies regarding the use of human and animal subjects, and data management.
- 7513 Advanced Biochemistry**
 (3-0) 3 hours credit. Prerequisite: BIO 3513 or an equivalent.
 An in-depth discussion of structure-function relationships in biological systems, including bioenergetics of metabolism and hormonal and nonhormonal regulation of metabolic pathways. (Formerly BIO 5513. Credit cannot be earned for both BIO 7513 and BIO 5513.)
- 7571-3 Experimental Techniques in the Life Sciences**
 1 to 3 hours credit. Prerequisite: Consent of instructor.
 Topics include research methods in cell and molecular biology, molecular neurobiology, and microbiology. May be repeated for credit as topics vary. (Formerly BIO 5571-3.)
- 7643 Cellular and Molecular Biology**
 (3-0) 3 hours credit. Prerequisite: BIO 3513 or consent of instructor.
 Structure of eucaryotic and procaryotic cells, functions of biomembranes and cytoplasmic organelles, and regulation of cellular activity. (Formerly BIO 6643. Credit cannot be earned for both BIO 7643 and BIO 6643.)

DIVISION OF MATHEMATICS AND STATISTICS

Master of Science Degree in Mathematics

The Master of Science degree in Mathematics is offered with three concentrations: mathematics, mathematics education, and statistics.

Program Admission Requirements. In addition to satisfying the University-wide graduate admission requirements, a B.A. or B.S. in Mathematics or Statistics or a closely related field is highly recommended as preparation. Students who do not qualify for unconditional admission should anticipate that additional undergraduate and/or graduate coursework may be required to complete the degree. Applicants are required to submit scores from the Graduate Record Examination (GRE).

Degree Requirements. Degree candidates are required to successfully complete 36 semester credit hours.

- A. All students, regardless of concentration, must complete the following 9 hours of coursework:

MAT	5203	Theory of Functions of a Real Variable I
MAT	5283	Linear Algebra and Matrix Theory
STA	5503	Mathematical Statistics I

- B. In addition, students must complete the required courses for one of the following concentrations:

Mathematics (12 semester credit hours):

MAT	5173	Algebra I
MAT	5223	Theory of Functions of a Complex Variable I
MAT	5403	Functional Analysis I
MAT	5603	Numerical Analysis

Mathematics Education (9 semester credit hours):

MAT	5023	Problem Solving Seminar
MAT	5033	Foundations and Fundamental Concepts of Mathematics
MAT	5043	Euclidean and Non-Euclidean Geometry

Statistics (9 semester credit hours):

STA	5133	Data Analysis with Statistical Software
STA	5513	Mathematical Statistics II
STA	5713	Foundations of Linear Models

- C. Students must either write a master's thesis or complete 6 semester credit hours of advanced courses in the division as approved by the Graduate Advisor of Record.

- D. Students pursuing the concentration in Mathematics must normally take an additional 9 semester credit hours of coursework chosen from eligible graduate courses in the Division of Mathematics and Statistics. Students pursuing the concentration in Mathematics Education must normally take an additional 12 semester credit hours of coursework chosen from eligible graduate courses in the division, and they may apply a maximum of 9 semester credit hours of graduate coursework from other disciplines as approved by the Graduate Advisor of Record. Students pursuing the concentration in Statistics must normally take an additional 12 semester credit hours of coursework chosen from eligible statistics graduate courses, with a minimum of 6 semester credit hours in statistics. However, a maximum of 6 semester credit hours of graduate work from other disciplines approved by the Graduate Advisor of Record may be applied toward these requirements.
- E. Students are required to pass an advanced comprehensive examination or successfully defend their thesis research results.

More detailed information can be obtained from the Graduate Advisor of Record.

COURSE DESCRIPTIONS MATHEMATICS (MAT)

5003 Modern Mathematics for Teachers

(3-0) 3 hours credit.

A practical orientation concerned with the classroom uses of mathematics for teachers of K-12. May not be applied toward the Master of Science degree in Mathematics.

5013 Computers for Mathematics Teachers

(3-0) 3 hours credit.

A course for mathematics teachers on integrating the computer into the mathematics curriculum, with an algorithmic-oriented introduction to computer programming in BASIC or Pascal and the extensive use of mathematical software packages such as Derive. This course can only be applied to graduate majors in mathematics with a concentration in Mathematics Education. (Same as CS 5023. Credit cannot be earned for both MAT 5013 and CS 5023.)

5023 Problem-Solving Seminar

(3-0) 3 hours credit.

Students will have the opportunity to engage in extensive experience and practice in solving mathematical problems. This course can only be applied to majors in mathematics with a concentration in Mathematics Education.

5033 Foundations and Fundamental Concepts of Mathematics

(3-0) 3 hours credit.

Topics include the study of mathematics in antiquity as an empirical science, the shift from inductive reasoning to axiomatic structures, the development of geometry in the plane and 3-space, the discovery of analysis, the emergence

of axiomatic systems, and the focus on algebraic structures. This course can only be applied to majors in mathematics with a concentration in Mathematics Education.

5043 Euclidean and Non-Euclidean Geometry

(3-0) 3 hours credit.

Topics will be selected from advanced euclidean and non-euclidean geometry, solid analytic geometry, and differential geometry. This course can only be applied to majors in mathematics with a concentration in Mathematics Education.

5173 Algebra I

(3-0) 3 hours credit. Prerequisite: MAT 4233 or consent of instructor.

The opportunity for development of basic theory of algebraic structures. Areas of study include finite groups, isomorphism, direct sums, polynomial rings, algebraic numbers, number fields, unique factorization domain, prime ideals, and Galois groups.

5203 Theory of Functions of a Real Variable I

(3-0) 3 hours credit. Prerequisite: MAT 4223 or consent of instructor. Measure and integration theory.

5213 Theory of Functions of a Real Variable II

(3-0) 3 hours credit. Prerequisite: MAT 5203.

Further development of measure and integration theory, metric space topology, and elementary Banach space theory.

5223 Theory of Functions of a Complex Variable I

(3-0) 3 hours credit. Prerequisite: MAT 3213 or 4213.

Complex integration, Cauchy's theorem, calculus of residues, and power series.

5233 Theory of Functions of a Complex Variable II

(3-0) 3 hours credit. Prerequisite: MAT 5223.

Infinite products, entire functions, Picard's theorem, Riemann mapping theorem, and functions of several complex variables.

5243 General Topology I

(3-0) 3 hours credit. Prerequisite: MAT 4273 or consent of instructor.

Topological spaces, metric spaces, continua, and plane topology.

5253 General Topology II

(3-0) 3 hours credit. Prerequisite: MAT 5243.

Areas of study include introductory algebraic topology and introduction to topology of manifolds.

5263 Applied Algebra

(3-0) 3 hours credit. Prerequisite: MAT 4233 or an equivalent.

Areas of study include Boolean algebras, lattice theory and graph theory, finite fields, Lie groups, and Lie algebras.

- 5283 Linear Algebra and Matrix Theory**
(3-0) 3 hours credit. Prerequisite: MAT 2233 or an equivalent.
A study of linear algebraic structures and algebraic properties of matrices.
- 5293 Numerical Linear Algebra**
(3-0) 3 hours credit. Prerequisite: MAT 2233 or an equivalent.
Direct and iterative methods for solving general linear systems, the algebraic eigenvalue problem, least squares problems, and solutions of sparse systems arising from partial differential equations. (Same as CS 5293. Credit cannot be earned for both MAT 5293 and CS 5293.)
- 5313 Algebra II**
(3-0) 3 hours credit. Prerequisite: MAT 5173.
Areas of study include: groups, rings, fields, Galois theory, ideal theory, and representations of groups, module theory, and homological algebra.
- 5403 Functional Analysis I**
(3-0) 3 hours credit. Prerequisites: MAT 2233, 4273, and 5203, or their equivalents.
Topological vector spaces, inner product spaces, normed spaces, Hilbert spaces and Banach spaces, dual spaces, Hahn-Banach theorem, and bounded linear operators.
- 5413 Functional Analysis II**
(3-0) 3 hours credit. Prerequisite: MAT 5403.
Riesz representation theorem, spectral theory, Banach algebras, and C^* -algebras.
- 5553 Harmonic Analysis**
(3-0) 3 hours credit. Prerequisites: Either MAT 3223 and MAT 4223 or consent of instructor.
Theory of the Fourier, Laplace, and Hilbert transforms. Elements of the distribution theory. Harmonic functions. Function spaces: L_p -spaces, Hardy spaces, Sobolev spaces.
- 5603 Numerical Analysis**
(3-0) 3 hours credit. Prerequisite: MAT 3633 or consent of instructor.
Emphasis on the mathematical analysis of numerical methods. Areas of study include solution of nonlinear equations and function optimization, approximation theory and numerical quadrature. (Same as CS 5603. Credit cannot be earned for both MAT 5603 and CS 5603.)
- 5613 Numerical Solutions of Differential Equations**
(3-0) 3 hours credit. Prerequisite: MAT 5603 or an equivalent.
Emphasis on the mathematical analysis of numerical methods. Areas of study include the analysis of single and multistep methods of ordinary differential equations. Analysis of finite difference and finite element methods for partial differential equations. (Same as CS 5613. Credit cannot be earned for both MAT 5613 and CS 5613.)

5653 Differential Equations I

(3-0) 3 hours credit. Prerequisites: MAT 3613 and 4213, or consent of instructor.

Solution of initial-value problems, linear systems with constant coefficients, exponentials of operators, canonical forms and generic properties of operators, and contractions.

5663 Differential Equations II

(3-0) 3 hours credit. Prerequisite: MAT 5653.

Dynamic systems, the fundamental existence and uniqueness theorem, stability, the Poincare-Bendixson theorem, introduction to perturbation, and bifurcation theory.

5673 Partial Differential Equations I

(3-0) 3 hours credit. Prerequisite: MAT 3623, 5663, or consent of instructor. Classical theory of initial value and boundary value problems for partial differential equations.

5683 Partial Differential Equations II

(3-0) 3 hours credit. Prerequisite: MAT 5673.

Modern topics in partial differential equations.

5833 Perturbation Theory in Applied Mathematics

(3-0) 3 hours credit. Prerequisite: MAT 3613, 5653, or consent of instructor. Perturbation theory, asymptotic analysis, and boundary layer expansions.

5973 Directed Research

3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. The directed research course may involve either a laboratory or a theoretical problem. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6603 Optimization Techniques in Operations Research

(3-0) 3 hours credit. Prerequisites: MAT 2213, 2233, or consent of instructor. Analysis and application of optimization techniques in operations research. Emphasis on linear programming, nonlinear programming, and integer programming.

6901 Teaching Seminar

(1-0) 1 hour credit. Prerequisite: Designation as a teaching assistant in the Division of Mathematics and Statistics.

Designed to improve the instructional effectiveness of graduate students' teaching at the college level. Topics include boardwork, clear speech, teacher-student interaction, professional responsibilities, course content and pace, grading policy, test writing, sensitivity to student needs, information and technical support and guest lectures on special topics. The grade report for the course is either CR (satisfactory performance) or NC (unsatisfactory performance). This course may not be applied as credit toward a Master of Science degree in Mathematics.

6953 Independent Study

3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the appropriate graduate studies committee to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when topics vary, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6983 Master's Thesis

3 hours credit. Prerequisites: Permission of the Graduate Advisor of Record and thesis director.

Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

COURSE DESCRIPTIONS STATISTICS (STA)

5073 Methods of Statistics I

(3-0) 3 hours credit. Prerequisite: STA 1053.

Emphasis on methods and applications of statistics. Measure of location, variability, and association. Interpretation of categorical data. Hypothesis testing, use of SAS programs, applications. May not be applied to a Master of Science degree in Mathematics.

5083 Methods of Statistics II

(3-0) 3 hours credit. Prerequisite: STA 5073.

A continuation of STA 5073, with emphasis on linear statistical models. Use of SAS programs. Applications. Topics in applied statistics may include maximum likelihood estimation and its properties; likelihood ratio tests. Procedures in regression and model fitting, transformations of data, analysis of variance and others. May not be applied to a Master of Science degree in Mathematics.

5103 Applied Statistical Methods

(3-0) 3 hours credit. Prerequisite: STA 3523 or an equivalent.

Topics include graphical methods, estimation and hypothesis testing, regression and model fitting, transformations of data, and analysis of variance. Applications in science, biostatistics, engineering, and industry.

5133 Data Analysis with Statistical Software

(3-0) 3 hours credit. Prerequisites: CS 1713 and STA 3523, or their equivalents.

Statistical analysis of data sets using SAS, JMP, S-Plus, and other popular statistical software. Manipulation of data sets and production of reports and graphs. Emphasis is on linear models and basic multivariate procedures. Introduction to programming in the S-Plus language.

5213 Advanced Statistical Quality Control

(3-0) 3 hours credit. Prerequisite: EGR 5103 or consent of instructor.

Methods and techniques for process control, process and gage capability analyses, inspection plans, American National Standards, and recent advanced techniques. Use of statistical software including JMP. Tour of manufacturing industry. Case studies in process control outgoing quality and costs. A required project, assigned by a manufacturing company, must be presented. This course is designed for technology managers and engineers and may not be applied to a Master of Science degree in Statistics.

5233 Product and Manufacturing Reliability

(3-0) 3 hours credit. Prerequisite: EGR 5103 or consent of instructor.

Topics include product and manufacturing reliability from managerial, engineering, and statistical perspectives. Emphasis on component and system reliability estimation, testing, and demonstration. Advanced topics such as accelerated life tests, Bayesian procedures, system availability, system maintainability, and compliance with international standards are addressed. Methods and theory are supported through data analytic packages such as JMP, SAS, and S-Plus. This course is designed for technology managers and engineers and may not be applied to a Master of Science degree in Statistics.

5253 Applied Time Series Analysis

(3-0) 3 hours credit. Prerequisite: STA 5103 or consent of instructor.

Modern techniques for time series analysis and their applications. Principles of model building. Regression methods, moving averages, and autoregressive integrated moving average models. Practical examples drawn from various application environments. Use of software such as MINITAB, SAS, and S-Plus in time series analysis.

- 5313 Theory of Sample Surveys with Applications**
(3-0) 3 hours credit. Prerequisite: STA 3523.
Basic sampling techniques and their comparisons for finite populations. Topics include simple random sampling, stratified sampling, ratio and regression estimates, systematic sampling, cluster sampling, multistage and double sampling, and bootstrap and other sampling plans.
- 5413 Nonparametric Statistics**
(3-0) 3 hours credit. Prerequisite: STA 5103 or consent of instructor.
Order statistics, test of goodness of fit, rank-order statistics, linear rank statistics for problems involving location and scale, association in multiple classifications, and asymptotic relative efficiency.
- 5503 Mathematical Statistics I**
(3-0) 3 hours credit. Prerequisites: MAT 4213 and STA 3513.
Axioms of probability, random variables and probability distributions, sampling distributions, and stochastic convergence.
- 5513 Mathematical Statistics II**
(3-0) 3 hours credit. Prerequisite: STA 5503.
Sufficient statistics, unbiased estimation, likelihood ratio test, sequential probability ratio test, and decision theory.
- 5643 Stochastic Processes**
(3-0) 3 hours credit. Prerequisite: STA 5503 or consent of instructor.
Poisson processes, renewal theory, Markov chains, and Markov processes, including branching processes, ruin problems, birth and death processes, and Brownian motion. Application in queueing theory, analysis of algorithms, and molecular genetics are discussed.
- 5713 Foundation of Linear Models**
(3-0) 3 hours credit. Prerequisites: MAT 2233 and either STA 5103 or consent of instructor.
G-inverses, multivariate normal, and distribution of quadratic forms; least squares estimation and the Gauss-Markov theorem; likelihood ratio tests for full-rank and less-than-full-rank models, including regression and analysis of variance models.
- 5723 Theory and Application of Linear Models**
(3-0) 3 hours credit. Prerequisite: STA 5713.
Analysis of covariance, random effects, and mixed effects models; analysis of repeated measures. Emphasis on applications and use of statistical packages.
- 5803 Process Control and Acceptance Sampling**
(3-0) 3 hours credit. Prerequisite: STA 3523 or STA 5103 or consent of instructor.
Introduction to statistical process control and product inspection plans. Topics include control charts by attributes and variables, special control charts, specification limits, process capability, and acceptance sampling plans by attributes and variables. Use of statistical software.

5813 Applied Multivariate Statistics

(3-0) 3 hours credit. Prerequisites: MAT 2233 and either STA 5103 or consent of instructor.

Principal components, factor analysis, cluster analysis, multidimensional scaling, discriminant analysis, multivariate normal distribution, estimation of mean vector and covariance matrix, Hotelling's T^2 , and tests concerning covariance matrices.

5833 Design and Analysis of Experiments

(3-0) 3 hours credit. Prerequisite: STA 3523, STA 5103, STA 5513, or consent of instructor.

Introduction to experimental design and data analysis in scientific and engineering settings. Topics include one-factor experiments, randomized block designs, factorials, two- and three-level factorial and fractional factorial designs, nested and split-plot designs, response surface methods and Taguchi methods. Use of statistical software.

5853 Analysis of Categorical Data

(3-0) 3 hours credit. Prerequisite: STA 5103 or 5503.

Analysis of multifactor contingency tables: linear and log-linear models, inference in complete and incomplete tables, model selection and assessing goodness of fit, other methods of estimation such as information theoretic approach, minimum chi-square and logit chi-square, and measures of association. Models of discrete data.

5903 Survival Analysis

(3-0) 3 hours credit. Prerequisite: STA 5513, 5103, or consent of instructor.

This course covers topics in survival measures and lifetime distributions. A primary approach focuses on estimation and hypothesis testing regarding the parameters in these models. Advanced topics, such as Cox regression models and competing risk models, are presented from epidemiological and biomedical databases. Methods and theory are supported through analytic software such as SAS and S-Plus.

5973 Directed Research

3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. The directed research course may involve either a laboratory or a theoretical problem. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6953 Independent Study

3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the appropriate graduate studies committee to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when topics vary, but not more than 6 hours, regardless of discipline, will apply to the master's degree. (Same as former STA 5993. Not more than 6 hours of STA 5993 and Special Problems courses, regardless of discipline, will apply to the master's degree).

6983 Master's Thesis

3 hours credit. Prerequisites: Permission of the Graduate Advisor of Record and thesis director.

Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

**COLLEGE OF SOCIAL
AND BEHAVIORAL SCIENCES**



COLLEGE OF SOCIAL AND BEHAVIORAL SCIENCES

DIVISION OF BEHAVIORAL AND CULTURAL SCIENCES

Master of Arts Degree in Anthropology

The Master of Arts program in Anthropology emphasizes the anthropology of North and Middle America. Students, in conjunction with faculty, may design their programs on the anthropology of North or Middle America, with a focus on the subdisciplines of archaeology or cultural anthropology. Faculty expertise lies in the archaeology of the Maya region; the archaeology of Texas, the American Southwest, and northern Mexico; the cultural anthropology of Texas and the Plains; ethnography and applied anthropology of Mexico and the United States; and medical anthropology of the Border region.

Program Admission Requirements. Applicants must submit a 500-word statement of purpose and two letters of recommendation with their applications. Applicants for admission as degree-seeking students must meet University-wide admission requirements and submit Graduate Record Examination (GRE) scores. Details are described in a supplementary application packet available from the Office of Graduate Studies or the Graduate Advisor of Record.

Applicants will be considered for unconditional admission as degree-seeking students if they have attained a grade-point average of at least 3.0 in the last 60 hours of undergraduate coursework and a combined score of 1000 on the verbal and quantitative sections of the GRE.

Applicants who do not meet these admission requirements may be considered for admission on a probationary basis if there are strong indications of unrealized academic potential.

Applicants for admission as non-degree-seeking students (special graduate students or non-degree-seeking graduate students) need not submit GRE scores but should have completed at least 12 semester credit hours in anthropology (with no more than 6 of the 12 in field school) before application. Non-degree-seeking students may be limited in the courses they are permitted to take. Admission as a non-degree-seeking student does not ensure subsequent admission as a degree-seeking student.

Applicants who are able to visit the UTSA campus are encouraged to meet with the division's graduate advisor of record and members of the anthropology faculty in conjunction with the application.

Degree Requirements. The minimum number of semester credit hours required for this degree is 33 (with thesis) or 36 (without thesis). In addition to the University's general requirements for graduate study and any coursework or other study required as a condition of admission, the Master of Arts degree in Anthropology requires the following:

A. 6 semester credit hours of required basic courses:

ANT	5023	History, Method, and Theory of Archaeology
ANT	5033	Paradigms of Americanist Anthropology

B. 3 semester credit hours from one of the following methods courses, depending on the student's interest area:

ANT	5513	Seminar in Analytical Methods in Archaeology
ANT	6353	Field Research Methods in Cultural Anthropology

C. 18 semester credit hours of elective courses chosen in consultation with the student's advisor and subject to the following conditions:

1. Students will normally take a minimum of 6 semester credit hours of electives in regular, organized graduate anthropology courses (this excludes fieldwork, independent studies, and internships). Exceptions may only be granted by the Graduate Studies Committee in Anthropology.
2. A maximum of 9 semester credit hours of fieldwork (ANT 5556, 6443, 6933, or 6953) may be applied toward the degree.
3. A maximum of 6 semester credit hours of internship (ANT 6931-3) may be applied toward the degree.
4. A maximum of 6 semester credit hours of independent study (ANT 6951-3) may be applied toward the degree.
5. A maximum of 6 semester credit hours of unduplicated upper-division undergraduate coursework may be applied to the degree.
6. Students are expected to develop a primary regional expertise. Knowledge of this region will be evaluated as part of the comprehensive evaluation (see below). In addition, students must take at least one other course focusing on a second region. This course may be in a subdiscipline other than that of the student's main interest.

D. Although there is no programwide language proficiency requirement, certain programs of study require students to demonstrate proficiency in a second language or in statistics. Students should consult their advisors regarding this matter.

E. A written comprehensive examination, tailored to the student's program and area of concentration, is required. The comprehensive examination will be taken no later than nine months after the completion of the required coursework. Satisfactory performance on the comprehensive examination is required for advancement to Option I or Option II.

F. *Option I* (with thesis). 6 semester credit hours of ANT 6983 Master's Thesis.

or

Option II (without thesis). 9 semester credit hours of coursework. Students seeking this option must petition the Anthropology Graduate Studies Committee. Normally, permission is granted only on presentation of evidence that the student has previously done scholarly work equivalent to that required in a master's thesis. Such evidence would be a scholarly contribution of monograph length, reflecting in-depth research on a topic. A major published article or monograph may potentially meet these requirements.

COURSE DESCRIPTIONS ANTHROPOLOGY (ANT)

- 5023 History, Method, and Theory of Archaeology**
(3-0) 3 hours credit.
A survey of the history and development of archaeology, research techniques, and method and theory of prehistoric research. May be repeated for credit with different instructors.
- 5033 Paradigms of Americanist Anthropology**
(3-0) 3 hours credit.
This course surveys the main conceptual, methodological, and theoretical developments in cultural anthropology, with particular emphasis on their application to the study of indigenous peoples of the Americas.
- 5043 Seminar in Laboratory Methods in Anthropology**
(3-0) 3 hours credit.
This seminar reviews the physical and technical aspects of analysis of anthropological materials. May be repeated for credit when topics vary.
- 5053 Seminar in Economic Anthropology**
Economic anthropology is the comparative study of the organization of production, distribution, and consumption, and the values and meanings associated with those activities. This course provides an overview of the history, scope, and development of economic anthropology, including formalist, substantivist, and Marxist approaches. Ethnographic cases are used to examine economies across different levels of complexity, and to explore how anthropologists have described preindustrial and industrial economies.
- 5283 Hunters and Gatherers**
(3-0) 3 hours credit.
A study of the major issues archaeologists address concerning the cultural ecology and cultural evolution of hunters and gatherers around the world.
- 5413 Seminar in the Prehistory of Texas and Adjacent Areas**
(3-0) 3 hours credit.
Intensive study of prehistoric and early historic aboriginal cultures of Texas and adjacent areas. Focus is on problems of interpretation, current archaeological research of the region, and the impact of federal legislation on Texas archaeology.

- 5453 Seminar on the Archaeology of the American Southwest and Adjacent Regions**
(3-0) 3 hours credit.
Review of the major prehistoric cultures of the American Southwest, including the Anasazi, Mogollon, and Hohokam cultural regions and adjacent areas. Emphasis is on current research.
- 5473 Settlement Pattern Analysis**
(3-0) 3 hours credit.
This course explores the wide array of data and theories used to identify and explain the patterned distribution of human activity. Archaeology's dependence on settlement pattern data is underscored, and the relationships between data and theory are critically evaluated.
- 5513 Seminar in Analytical Methods in Archaeology**
(3-0) 3 hours credit.
Basic quantitative and qualitative approaches to the analysis and interpretation of archaeological field and laboratory data are reviewed.
- 5556 Field Course in Archaeology**
(2-12) 6 hours credit. Prerequisite: Consent of instructor.
The opportunity for advanced training in field procedures and their applications to problem-oriented field research. May be repeated for credit.
- 6113 Seminar in the Anthropology of Mesoamerica**
(3-0) 3 hours credit.
Attention is centered on a limited number of significant problems in Mesoamerican anthropology to which materials from archaeology, ethnology, and ethnohistory contribute. Examples of such problems are demography and the rise of Mayan civilization, roots of Mesoamerican peasant culture, and distribution analysis of cultural and language variance. May be repeated for credit when topics vary.
- 6133 Seminar in Medical Anthropology**
(3-0) 3 hours credit. Prerequisite: ANT 3173 recommended.
Course focuses on a limited number of significant problems in medical anthropology to which materials from ethnohistory, archaeology, ethnology, paleopathology, and cultural ecology contribute. Topics may include interaction of genetic and cultural influences and health consequences of technological change. May be repeated for credit when topics vary.
- 6203 Seminar in Recent Trends in Archaeological Method and Theory**
(3-0) 3 hours credit.
A survey of major issues in archaeological method and theory. Attention is focused on recent methodological and theoretical developments in archaeology. May be repeated for credit with different instructors.
- 6213 Topics in the Anthropology of Native North America**
(3-0) 3 hours credit.
An organized course examining topics of current interest to anthropologists with a focus on North America. May be repeated for credit.

- 6223 The Archaeology of Household and Residence**
(3-0) 3 hours credit.
This course examines the data, methods, and theories used to reconstruct the composition and activities of domestic groups. The relevance of household studies in archaeology is stressed through inspection of the economic, political, and ideological links between domestic groups and broader social formations.
- 6303 Seminar in Research Design and Proposal Writing**
(3-0) 3 hours credit.
This course familiarizes students with the philosophical foundations of social science research, the structure and types of research designs, and pragmatic considerations of data acquisition and analysis. The relationship between theory and research design and methods is emphasized. The final project is a thesis research proposal for submission for funding.
- 6353 Field Research Methods in Cultural Anthropology**
(3-0) 3 hours credit.
The study and practice of field research methods of cultural anthropology emphasizing participant observation and use of informants.
- 6443 Supervised Field Research**
(0-9) 3 hours credit. Prerequisite: Consent of instructor.
The course is designed to offer the opportunity for intensive training and requires the student to carry out independent research and analysis of field data. The grade report for the course is either CR (satisfactory performance) or NC (unsatisfactory performance). May be repeated for credit.
- 6503 Seminar in Cultural Resource Management**
(3-0) 3 hours credit.
This seminar reviews the legislative basis, practical application, and current state of cultural resource management in Texas and the United States.
- 6931-3 Internship in Anthropology**
1 to 3 hours credit.
A supervised experience, relevant to the student's program of study, within selected community organizations. Must be taken on a credit/no credit basis, but not more than 6 hours will apply to a master's degree.
- 6951-3 Independent Study**
1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to a master's degree.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the appropriate graduate studies committee to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6971-3 Special Problems

1 to 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when the topics vary.

6983 Master's Thesis

3 hours credit. Prerequisites: Permission of the Graduate Advisor of Record and thesis director.

Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

Master of Arts Degree in History

The Master of Arts degree in History offers students the opportunity to study history and the historian's craft. The program is designed to serve the needs of individual students as well as the educational and intellectual interests of San Antonio and South Texas.

The program has two objectives: to give students an understanding of the discipline, and to involve them in the process of historical research and writing. Students will become acquainted with the work of historians and will approach their study of local and national societies from the viewpoint of a professional historian.

The history program offers thesis and nonthesis options. Students who anticipate graduate work beyond the master's level are advised to select the thesis option.

Program Admission Requirements. Applicants must have completed 18 semester credit hours in history (12 of which were at the upper-division level). Relevant coursework in related disciplines will be considered. Applicants must have a minimum grade-point average of 3.0 or combined math and verbal Graduate Record Examination (GRE) scores of 1000 or above. Applicants are encouraged to submit a 500-word statement of purpose.

Applicants for admission as non-degree-seeking students (special graduate students or non-degree-seeking graduate students) should have completed at least 12 semester hours in history or a related field before application. Non-degree-seeking students

may be limited in the courses they are permitted to take. Admission as a non-degree-seeking student does not ensure subsequent admission as a degree-seeking student.

Degree Requirements. The minimum number of semester credit hours required for this degree, exclusive of coursework or other study required to remove admission deficiencies, is 33.

Degree candidates must complete

A. 6 semester credit hours chosen from general field readings courses:

HIS	5013	Modern Europe
HIS	5033	Readings in American History I
HIS	5043	Readings in American History II
HIS	5053	Medieval Europe
HIS	5063	Early Modern Europe

B. 15 semester credit hours of elective courses, chosen in consultation with the student's advisor. Up to 6 hours may be taken in disciplines outside history with prior approval of the student's graduate advisor of record. Outside courses must clearly support the student's program of study.

C. 6 semester credit hours consisting of the sequence

HIS	6813	Proseminar in History
HIS	6903	Research Seminar in History

This sequence will vary in subject. A student should take HIS 6813 and then HIS 6903 in the same subject.

D. 6 semester credit hours as follows:

Option I (with thesis). The satisfactory completion of HIS 6983 Master's Thesis (6 hours) in accordance with University regulations as stated in Options for Master's Degrees in chapter 6, Master's Degree Regulations.

Option II (without thesis). 6 semester credit hours of coursework in addition to that required under C above. An additional proseminar–research seminar sequence is recommended, particularly for students interested in pursuing doctoral degrees.

In addition to the requirements set forth above, degree candidates are required to pass a written comprehensive examination. The comprehensive examination is taken in or after the semester in which the student completes the requirements items A, B, and C above; it must be passed before the student can enroll in HIS 6983 Master's Thesis under Option I or receive a degree under Option II.

A description of the procedures and requirements of the comprehensive examination is available from the student's academic advisor or the Graduate Advisor of Record.

Competence in either a foreign language or a technical research methodology is required. The requirement must be fulfilled before a student in Option I enrolls in HIS 6983 Master's Thesis and by the time a student in Option II applies for graduation.

The language competence option is normally selected by students whose areas of research concentration are deemed by the Graduate Studies Committee to require knowledge of a foreign language. Language competence is demonstrated by completing at least four semesters in the same language at the university level or four years in the same language at the high school level (with a grade of "C" or higher), or by achieving the equivalent CLEP test score in a language. Technical research competence is demonstrated by passing HIS 6613 Technical Methods.

COURSE DESCRIPTIONS

HISTORY

(HIS)

5013 Modern European History

(3-0) 3 hours credit.

An examination of the major historical and historiographical problems in the history of Europe from the seventeenth century to the present. (Formerly HIS 5083. Credit cannot be earned for both HIS 5013 and HIS 5083.)

5033 Readings in American History I

(3-0) 3 hours credit.

Overview of important historiographical issues in American history to 1877, intended to acquaint the student with current directions in research and interpretation. (Credit cannot be earned for both HIS 5033 and HIS 5073.)

5043 Readings in American History II

(3-0) 3 hours credit.

Overview of important historiographical issues in American history from 1877 to the present. Intended to acquaint students with current directions in historical research and interpretation.

5053 Medieval Europe

(3-0) 3 hours credit.

An examination of the major problems in the history of medieval Europe, from the second to the fourteenth century. The course focuses on changing interpretations in medieval history but also stresses the reading of primary texts.

5063 Early Modern European History

(3-0) 3 hours credit.

An examination of the major historiographical and historical problems in early modern European history, from the fourteenth century to the seventeenth century.

5093 Designing a College-Level History Survey

(3-0) 3 hours credit.

A comprehensive approach to constructing history survey courses for the college level. Topics may include a survey of current curriculum debates; course and syllabus design; selection of textbook and other readings; evaluation and grading; leading discussions; nontraditional instructional methods, including the use of new technologies; and lecture preparation and presentation.

5123 The American Revolution, 1763–1789

(3-0) 3 hours credit.

A history of British America from the imperial crisis of 1763 to the ratification of the United States Constitution in 1789, with emphasis on the early beginnings of the American nation and social, economic, military, and cultural features of the revolutionary movement.

5153 The Civil War and Reconstruction, 1850–1877

(3-0) 3 hours credit.

An examination of the political, social, and economic factors in the 1850s that led to the American Civil War, as well as a study of the military, diplomatic, and political consequences of the war and efforts to create a new union.

5183 The Rise of Industrial America

(3-0) 3 hours credit.

An examination of developments in the United States in the late nineteenth and early twentieth century. Topics may include state building, the organization of industrialization, reform movements, and the effects of immigration and urbanization on American society.

5193 The Emergence of Modern America, 1929 to the Present

(3-0) 3 hours credit.

Analysis of recent American history with emphasis on the rise of the United States as a world power, the Great Depression, FDR and the New Deal, World War II, the Cold War, and an assessment of the administrations of recent presidents.

5203 American Political History

(3-0) 3 hours credit.

Examines the role of government and the political process in the United States. Topics may include the origins of the political system, the evolution of political parties, and the expansion of the public sector.

5263 The Spanish Borderlands, 1521–1821

(3-0) 3 hours credit.

A comprehensive study of Spanish exploration and colonization in the borderlands adjacent to the international boundary between the southwestern United States and Mexico. Emphasis on Hispanic institutions and cultural values that shaped the development of a frontier society on the eve of Mexican independence. Attention is given to bibliographic sources and specialized readings.

5303 Twentieth-Century Texas

(3-0) 3 hours credit.

An examination of Texas society, culture, and politics in modern times. Topics may include the period of reform in the 1890s, the boom in oil, the growth of cities, the politics of the Progressive Era, the developments of the Twenties, the Depression and New Deal, World War II, the era of Lyndon Baines Johnson, and the expansion of industry in the state and the Sun Belt.

5313 South Texas: Rural and Urban

(3-0) 3 hours credit.

An overview and analysis of the development of South Texas, from pre-Columbian cultures to the rise of urbanization. Emphasis on Spanish exploration and settlement of Nuevo Santander, contact with indigenous cultures, the impact of nineteenth-century warfare, and the rapid transformation of the region through urbanization.

5423 Colonial Mexico

(3-0) 3 hours credit.

A detailed examination of the Spanish conquest and colonization of Mexico from 1521 to Independence. Special attention is paid to the transformation of Indian society under Spanish rule, the development of the colonial economy, and the formation of an interrelated colonial elite.

5433 Mexico since Independence

(3-0) 3 hours credit.

Examines the history of Mexico following independence from Spain in 1821. Consideration is given to the disintegration of the colonial system, nineteenth-century reforms, the Porfiriato, the Mexican Revolution, and their effects on contemporary Mexico. Students may have the opportunity to work in Mexico.

5443 Latin American Social Movements

(3-0) 3 hours credit.

An examination of various social movements during the colonial and national periods. The course focuses on peasant movements, social banditry, slave resistance, and modern working-class mobilizations.

5513 From Scholasticism to the Rise of Science

(3-0) 3 hours credit.

This course focuses on the emergence of a new culture in Italy as a consequence of the end of the Middle Ages and the decay of the medieval synthesis. It also examines the nature of the Northern European Renaissance, the Reformation, the Wars of Religion, and the rise of skepticism and rationalism.

5613 Stalin and Stalinism

(3-0) 3 hours credit.

This course examines the essential features of Stalinism, identifying their antecedents and comparing Stalinism with other social revolutionary or state-building strategies.

5653 Modern Chinese History

(3-0) 3 hours credit.

This course examines Chinese history since 1550, with a focus on the major historiographical debates in recent scholarship.

5673 Modern Japanese History

(3-0) 3 hours credit.

The history of Japan since 1600, with particular emphasis on interpretive debates and methodological issues.

- 5683 The Chinese Diaspora**
(3-0) 3 hours credit.
This course examines the history of Chinese international migration and settlement from the sixteenth century to the present, with emphasis on the period since 1800.
- 5723 The Origins of the World Wars**
(3-0) 3 hours credit.
An examination of the complex processes leading up to the outbreak of world war in 1914 and 1939. Focuses on international politics and the internal politics of major warring nations.
- 6113 Law and Society in America**
(3-0) 3 hours credit.
An examination of the role of law as both a reflection and initiator of change in American life, from colonial times to the present. Topics range from seventeenth-century slavery to the equal rights revolution of the twentieth century.
- 6163 Women in the United States**
(3-0) 3 hours credit.
Analyzes the experiences of women in the United States from the colonial period to the present. Topics may include economic roles, legal issues, religion, culture, feminist movements, and family life.
- 6173 Hispanics in the United States**
(3-0) 3 hours credit.
Examines the Mexican American, Cuban American, and Puerto Rican American experience in the United States, treating the historical relationship between this nation and the countries of origin and the interaction between these groups and mainstream society.
- 6193 The City in History**
(3-0) 3 hours credit.
Exploration of the roles of the urban place in the formation of modern culture, society, and polity. Evaluation of the shifting functions of the urban factor and cultural change. Focus is on the U.S. experience from a comparative perspective.
- 6213 Modern Warfare**
(3-0) 3 credit hours.
A comparison of the ways culture has influenced the conduct of warfare in Europe and America since the rise of the nation-state.
- 6413 Topics in U.S. History**
(3-0) 3 hours credit.
Examines topics of current interest to historians of the United States. May be repeated for credit when topics vary.

- 6423 Topics in European History**
(3-0) 3 hours credit.
Examines topics of current interest to historians of Europe. May be repeated for credit when topics vary.
- 6433 Topics in Latin American History**
(3-0) 3 hours credit.
Examines topics of current interest to historians of Latin America. May be repeated for credit when topics vary.
- 6473 Topics in Asian History**
(3-0) 3 hours credit.
Examines topics of current interest to historians of Asia. May be repeated for credit when topics vary.
- 6613 Technical Methods**
(3-0) 3 hours credit.
Introduction of quantitative analysis of historical sources. Students have the opportunity to gain experience in research design, data collection, data manipulation, and statistical analysis with the aid of mainframe and microcomputers. Experience with computers or coursework in statistics is desirable but not required.
- 6623 The Uses and Abuses of History**
(3-0) 3 hours credit.
The example of historical investigation of the standing, status, legitimacy, and value of history and related humanities disciplines within and outside schools and universities. Interests include public and private roles of scholars and intellectuals, public history, literary and cinematic uses, public policy applications, cultural criticism, and alternative conceptions of humanists' and historians' activities.
- 6813 Proseminar in History**
(3-0) 3 hours credit.
A detailed investigation of a major historical subject, with particular attention to current research and major interpretations. Intended as preparation for HIS 6903. May be repeated for credit when topics vary.
- 6903 Research Seminar in History**
(3-0) 3 hours credit. Prerequisite: HIS 6813 in the specific subject of the seminar or consent of instructor.
An examination of research materials pertinent to topics in history explored in HIS 6813, of methodologies developed to interpret these materials, and of theoretical issues guiding inquiry. Preparation of a primary research paper required. May be repeated for credit when topics vary.
- 6951-3 Independent Study**
1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or

not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the appropriate graduate studies committee to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6973 Special Problems

(3-0) 3 hours credit.

An organized course providing specialized study in a historical field not normally available as part of the regular course offerings. May be repeated for credit when topics vary.

6983 Master's Thesis

3 hours credit. Prerequisites: Permission of the Graduate Advisor of Record and thesis director.

Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

Master of Science Degree in Psychology

The Master of Science degree in Psychology is designed to address the needs of two groups of students: students who wish to pursue doctoral studies and need additional coursework and research experience in order to be competitive for admission to doctoral programs, and students who need graduate-level training in order to be competitive for jobs in behavioral science laboratory settings. The program is designed to give students extensive research experience and coursework in experimental methodology, statistics, and the content areas of experimental psychology (e.g., social, personality, cognitive, developmental, clinical).

Program Admission Requirements. Degree-seeking students normally are not admitted for the spring or summer semesters due to course-sequence requirements in the program. Applicants for unconditional admission in the Fall Semester must meet University-wide admission requirements in addition to the following psychology admission requirements:

1. Combined scores of 1000 on the verbal and quantitative sections of the Graduate Record Examination (GRE).
2. Completion of a minimum of 18 undergraduate credit hours in psychology (12 of which must be at the upper-division level). These hours must include at least one course in statistics and one course in experimental psychology. A single

course that combines instruction in statistics and experimental methodology may be accepted, pending the approval of the Graduate Committee in Psychology.

- 3. A grade-point average of at least 3.0 in the last 60 hours of undergraduate coursework and a 3.0 average in psychology courses.
- 4. Completion of the Psychology Graduate Application, which addresses issues pertaining to research experience and professional goals. Call the Division of Behavioral and Cultural Sciences at (210) 458-4333 to request the application.
- 5. Two letters of recommendation from behavioral scientists with whom the applicant has taken undergraduate or graduate courses. Recommendation forms are included with the Psychology Graduate Application.

All application materials must be submitted by the University's fall application deadline. The Psychology Graduate Application and the letters of recommendation should be sent directly to the Graduate Advisor of Record in the Division of Behavioral and Cultural Sciences. The University application form and application fee, official school transcripts, and GRE scores should be sent directly to the Office of Admissions and Registrar.

Applicants who do not meet requirements for unconditional admission will be considered for admission on a conditional basis if there are indications of unrealized potential.

The highly individualized nature of the program dictates that a limited number of students be admitted each year. Early submission of application materials is strongly encouraged for this reason.

Degree Requirements. The minimum number of semester credit hours required for this degree, exclusive of coursework or other study required to remove admission deficiencies, is 36. Typically, students complete the program in two years (taking three courses a semester, excluding summers) or three years (taking two courses a semester, excluding summers).

Degree candidates must complete

A. 15 semester credit hours of core courses:

PSY	5113	Contemporary Research Paradigms in Psychology
PSY	5213	Design Considerations in Behavioral Research
PSY	5413	Inferential Statistics
PSY	6113	Perspectives in Measurement of Behavior
PSY	6213	Correlation and Regression Analyses

B. 9 hours chosen from

PSY	5303	Research Seminar in Developmental Psychology
PSY	5313	Research Seminar in Psychopathology
PSY	5323	Research Seminar in Individual Differences and Personality Assessment
PSY	5333	Research Seminar in Social Psychological Research
PSY	5343	Research Seminar in Human Cognition
PSY	5353	Research Seminar in Industrial/Organizational Psychology

C. A master's thesis and 6 hours of PSY 6983 Master's Thesis

D. 6 hours of electives chosen from

PSY	6513	Psychology Research Internship
PSY	6951-3	Independent Study
PSY	6973	Special Problems

Students admitted to the program should consult their assigned faculty advisors or the Graduate Advisor of Record for specific program requirements.

The program does not require proficiency in a foreign language. A written comprehensive exam is required before students may register for PSY 6983 Master's Thesis.

COURSE DESCRIPTIONS PSYCHOLOGY (PSY)

5113 Contemporary Research Paradigms in Psychology

(3-0) 3 hours credit. Prerequisite: Consent of the instructor or admission to the psychology program.

An introduction to the research questions and the theoretical and methodological assumptions that characterize different subfields in psychology.

5213 Design Considerations in Behavioral Research

(3-0) 3 hours credit. Prerequisite: Consent of the instructor or admission to the psychology program.

An examination of criteria and procedures for translating questions of theory and application into effective and relevant research plans.

5303 Research Seminar in Developmental Psychology

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in PSY 5213 or consent of the instructor.

A critical analysis of the theories and empirical evidence that form the basis for understanding developmental change. Special emphasis is given to the issue of measurement of age-related change.

5313 Research Seminar in Psychopathology

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in PSY 5213 or consent of the instructor.

A critical analysis of the theories, research methodology, and empirical evidence that form the basis for understanding and treating mental disorders.

5323 Research Seminar in Individual Differences and Personality Assessment

(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in PSY 5213 or consent of the instructor.

A critical analysis of the theories and empirical data regarding the psychological processes that underlie individual differences in personality.

- 5333 Research Seminar in Social Psychological Research**
(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in PSY 5213 or consent of the instructor.
A critical analysis of the theories and empirical findings regarding the psychological processes that underlie human social behavior.
- 5343 Research Seminar in Human Cognition**
(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in PSY 5213 or consent of the instructor.
A critical analysis of the ways that humans select, organize, store, retrieve, modify, and apply information as they cope in adapting to the world. The seminar focuses on selected topics of significance in the contemporary information-processing literature.
- 5353 Research Seminar in Industrial/Organizational Psychology**
(3-0) 3 hours credit. Prerequisites: Completion of or concurrent enrollment in PSY 5213 or consent of the instructor.
A critical analysis of the theories, research methodology, and empirical findings that form the basis for understanding work behavior. Additional focus on methods used to assess and evaluate behavior and jobs.
- 5413 Inferential Statistics**
(3-0) 3 hours credit. Prerequisite: PSY 5213.
Application of selected parametric and nonparametric procedures to the analysis and interpretation of empirical data.
- 6113 Perspectives in Measurement of Behavior**
(3-0) 3 hours credit. Prerequisite: PSY 5213 or consent of the instructor.
An examination of criteria and procedures for the development of valid and reliable measures of behavior.
- 6213 Correlation and Regression Analyses**
(3-0) 3 hours credit. Prerequisite: PSY 5213 or consent of the instructor.
Application of selected multivariate procedures to the analysis and interpretation of empirical data.
- 6513 Psychology Research Internship**
(3-0) 3 hours credit. Prerequisites: Consent of instructor and student's graduate advisor.
Students assist in conducting supervised research in a local organization. May be repeated for credit to a maximum of 6 hours.
- 6951-3 Independent Study**
1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6961 Comprehensive Exam

1 hour credit. Prerequisite: Approval of the Graduate Studies Committee to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6973 Special Problems

(3-0) 3 hours credit. Prerequisites: Consent of instructor and student's graduate advisor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. The course may be repeated for credit when the topics vary, but no more than 3 hours, regardless of discipline, may be applied to the master's degree.

6983 Master's Thesis

3 hours credit. Prerequisites: Written thesis proposal must be approved by the Graduate Studies Committee prior to enrollment.

Supervised thesis research and preparation. May be repeated for credit, but no more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

DIVISION OF BICULTURAL-BILINGUAL STUDIES

Master of Arts Degree in Bicultural-Bilingual Studies

The Master of Arts degree in Bicultural-Bilingual Studies is designed to respond to a variety of societal needs through advanced multidisciplinary study in language, culture, and related disciplines. It has concentrations in Bicultural-Bilingual Education, Bicultural Studies, and English as a Second Language.

Program Admission Requirements. The Division of Bicultural-Bilingual Studies offers an interdisciplinary program that encourages applicants from a wide range of disciplines. Applicants who do not meet University-wide requirements for unconditional admission may be admitted conditionally if scores from the Graduate Record Examination* (GRE), letters of recommendation, and/or previous work in the field provide evidence of academic potential.

Degree Requirements. Degree candidates are required to successfully complete a 36-semester-credit-hour program. Upon completion of at least 30 semester credit hours of coursework, the candidate is required to pass a written and oral comprehensive examination.

Candidates for the concentration in Bicultural-Bilingual Education must demonstrate proficiency in a second language.

Candidates for the concentrations in Bicultural Studies and English as a Second Language are required to give evidence of second language learning experiences acceptable to the division's graduate studies committee.

Bicultural-Bilingual Education Concentration

This concentration is offered for students interested in advanced study in the design and implementation of bicultural-bilingual education programs. This interdisciplinary course of study presents systematic instruction in bilingualism, cultural dynamics, and applied linguistics. It also includes an examination of theory and research related to effective bilingual education. The master's degree is offered under two options: thesis and nonthesis.

Degree Requirements. Degree candidates must complete the following:

- A. Required coursework. 30 semester credit hours of coursework from six major areas as follows:

Sociocultural Studies (6 hours from the following):

BBL	5003	Foundations for Bicultural Studies
BBL	5013	Multicultural Groups in the United States

*Information on the GRE and applications for the test may be obtained from the Testing Center at UTSA or from the Educational Testing Service, Princeton, New Jersey 08540. The institution code for the University of Texas at San Antonio is 6919-5 for the GRE.

BBL	5023	Cultural Adaptation in Bilingual Societies
BBL	5073	Psychological Considerations in Bicultural-Bilingual Environments
BBL	5123	Sociolinguistics for Bilingual and Second Language Studies
BBL	5133	Latino Biculturalism in the United States

Bilingual Education Theory (3 hours):

BBL	5113	Theoretical Foundations of Bicultural-Bilingual Education
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Linguistics and Second Language Studies (3 hours from the following):

ESL	5003	Linguistics for Second Language and Bilingual Specialists
ESL	5013	Foundations of Second Language Acquisition

Teaching Methodology: Content and Language (6 hours from the following):

BBL	5033	Bilingual Content Instruction
BBL	5063	Biliteracy in Bilingual Classrooms
BBL	5143	Communication in Bilingual Classrooms
BBL	5193	Multicultural Literature for Children

Research and Assessment (6 hours):

BBL	5053	Assessment in Bilingual and Second Language Studies
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3 hours from the following:

BBL	6043	Bilingual Education Research
BBL	6063	Research Methods in Bilingual and Second Language Studies

English as a Second Language (6 hours from the following):

ESL	5053	Second Language Instruction in School Contexts
ESL	5063	Language and Content-Area Instruction
ESL	6063	Second Language Writing

B. Option I. 6 semester credit hours of Master's Thesis

or

Option II. 6 semester credit hours of graduate elective coursework in Bicultural-Bilingual Studies, English as a Second Language, or in approved related areas

Bicultural Studies Concentration

This program of study offers the student the opportunity to pursue an interdisciplinary approach to the study of sociocultural dynamics in multicultural societies. Emphasis is on the study of biculturalism in the United States. Courses are designed for students with professional, policy, and research interests in intercultural relations, government,

education, ethnic studies, urban studies, business, health, and social services. Students who pursue this degree may come from a wide range of academic backgrounds including, the humanities, social sciences, and business. At least 21 semester credit hours must be courses with a BBL designation. The master's degree is offered under two options: thesis and nonthesis.

Degree requirements. Degree candidates must complete the following:

- A. Required coursework. 30 semester credit hours of coursework from four major areas as follows:

Sociocultural Foundations (12 hours):

BBL 5003 Foundations for Bicultural Studies

9 additional semester credit hours, selected from the following:

BBL 5013 Multicultural Groups in the United States

BBL 5023 Cultural Adaptation in Bilingual Societies

BBL 5073 Psychological Considerations in Bicultural-Bilingual Environments

BBL 5133 Latino Biculturalism in the United States

BBL 6033 Topics in Bicultural Studies*

Historical Foundations (3 hours from the following):

HIS 5263 The Spanish Borderlands, 1521–1821

HIS 5313 South Texas: Rural and Urban

HIS 5423 Colonial Mexico

HIS 5433 Mexico since Independence

HIS 6173 Hispanics in the United States

Language and Expressive Culture (9 hours from the following):

AHC 5823 Topics in Mesoamerican Pre-Columbian Art

AHC 5843 Topics in Latin American Colonial Art

AHC 5853 Topics in Contemporary Latin American Art

BBL 5043 Ethnography of Communication

BBL 5093 Multicultural Art and Folklore in the United States

BBL 5123 Sociolinguistics for Bilingual and Second Language Studies

BBL 5193 Multicultural Literature for Children

ESL 5003 Linguistics for Second Language and Bilingual Specialists

SPN 5473 Latin American Civilization

SPN 5483 Studies in Hispanic Culture

SPN 5803 Mexican American Literature

SPN 5853 Spanish of the Southwest

Research Foundations (6 hours from the following):

BBL 6073 Ethnographic Research Methods in Bicultural-Bilingual Studies

*Consult the graduate advisor.

BBL	6053	Testing Members of Bicultural-Bilingual Societies or
BBL	6063	Research Methods in Bilingual and Second Language Studies

B. *Option I.* 6 semester credit hours of Master's Thesis

or

Option II. 6 semester credit hours of graduate elective coursework in bicultural-bilingual studies, English as a second language, or approved related areas

English as a Second Language Concentration

This program of study is designed for students interested in teaching English as a second language (ESL) to children or adults in schools and programs in the United States or in international settings. It is an interdisciplinary program that presents systematic instruction in applied linguistics, second language acquisition theory, and ESL program implementation. Students must take at least 21 semester credit hours of English as a second language courses and 9 hours of bicultural-bilingual studies courses. The master's degree is offered under two options: thesis and nonthesis.

Degree requirements. Degree candidates must complete the following:

A. Required coursework. 30 semester credit hours of coursework from four major areas as follows:

Theory of Language, Language Acquisition, and Language Use (12 hours):

ESL	5003	Linguistics for Second Language and Bilingual Specialists
9 hours from the following:		
BBL	5123	Sociolinguistics for Bilingual and Second Language Studies
ESL	5013	Foundations of Second Language Acquisition
ESL	5023	Language Analysis for Second Language Specialists
ESL	6013	Second Language Acquisition Research

Classroom Practice and Program Designs (9 hours from the following):

ESL	5033	Second Language Reading
ESL	5043	Listening and Speaking in Second Language Programs
ESL	5053	Second Language Instruction in School Contexts
ESL	5063	Language and Content-Area Instruction
ESL	6043	Family and Adult Literacy in Language Minority Communities
ESL	6053	Program and Syllabus Design
ESL	6063	Second Language Writing

Language Assessment and Evaluation (6 hours from the following):

BBL	5053	Assessment in Bilingual and Second Language Studies
BBL	6063	Research Methods in Bilingual and Second Language Studies
BBL	6073	Ethnographic Research Methods in Bicultural-Bilingual Studies

Sociocultural Studies (3 hours from the following):

BBL	5003	Foundations for Bicultural Studies
BBL	5013	Multicultural Groups in the United States
BBL	5023	Cultural Adaptation in Bilingual Societies
BBL	5073	Psychological Considerations in Bicultural-Bilingual Environments
BBL	5133	Latino Biculturalism in the United States

B. *Option I.* 6 semester credit hours of Master's Thesis

or

Option II. 6 semester credit hours of graduate elective coursework in bicultural-bilingual studies, English as a second language, or approved related areas

COURSE DESCRIPTIONS BICULTURAL-BILINGUAL STUDIES (BBL)

- 5003 Foundations for Bicultural Studies**
(3-0) 3 hours credit.
The study of basic concepts, principles, and approaches regarding theories of biculturalism and multiculturalism, and theoretical frameworks for the interdisciplinary study of culture and society.
- 5013 Multicultural Groups in the United States**
(3-0) 3 hours credit.
A study of sociocultural diversity, culture maintenance and change, culture revitalization, and other aspects of ethnicity in the past, present, and future of the United States.
- 5023 Cultural Adaptation in Bilingual Societies**
(3-0) 3 hours credit.
The study of the dynamic relations between culture, language, and the social environment. Explanations for the range of cultural, historical, psychological, and political-economic adaptations in diverse systems.
- 5033 Bilingual Content Instruction**
(3-0) 3 hours credit.
Examines curriculum development, materials, and pedagogy applicable to the integrated teaching of mathematics and the social and natural sciences

in bilingual classrooms. Emphasizes research-based methods that use the learner's first language as a vehicle for content instruction. Offered in Spanish and English.

5043 Ethnography of Communication

(3-0) 3 hours credit.

Examines the theoretical perspectives for the study of communication in varying cultural contexts. Topics may include intercultural and intracultural communication patterns, the effect of cultural differences on interactions, culture concepts, nonverbal behavior, and increasing intercultural effectiveness.

5053 Assessment in Bilingual and Second Language Studies

(3-0) 3 hours credit.

Study and evaluation of means of assessing language proficiency in bilingual and English as a second language programs. Critical review of standardized tests of language proficiency, as well as alternative and informal language assessment techniques; consideration of relationship between second language proficiency and academic achievement; and sociocultural dimensions of testing and assessment.

5063 Biliteracy in Bilingual Classrooms

(3-0) 3 hours credit.

Examines research and instructional practices supporting the acquisition of biliteracy through reading, writing, speaking, and listening. Preparation and adaptation of holistic, thematically based materials and activities. Critical evaluation of existing materials in Spanish. Offered in Spanish and English.

5073 Psychological Considerations in Bicultural-Bilingual Environments

(3-0) 3 hours credit.

The study of the social and cognitive psychological factors facing populations in bicultural-bilingual environments.

5093 Multicultural Art and Folklore in the United States

(3-0) 3 hours credit.

A study of the visual arts and the folklore of representative culture groups creating a significant contribution to contemporary society. The course emphasizes Latino contributions to mural and street art, regional and religious art, as well as folk, popular, and other arts.

5113 Theoretical Foundations of Bicultural-Bilingual Education

(3-0) 3 hours credit.

A critical analysis of the rationale for bicultural-bilingual education focusing on history, philosophy, and theory. The study and analysis of bicultural-bilingual program designs, research perspectives on effective implementation, and adaptation to community needs.

5123 Sociolinguistics for Bilingual and Second Language Studies

(3-0) 3 hours credit.

Study of sociolinguistic theory and methodology and their applicability to the linguistic issues of multilingual and dialectally diverse communities. Topics may include sociolinguistic approaches to second language acquisition, language retention and loss, and language planning.

5133 Latino Biculturalism in the United States

(3-0) 3 hours credit.

A study of Mexican American, Puerto Rican, Cuban, and other Latino communities in the United States in the twentieth century. Topics may include economic labor force participation, cultural revitalization and self-determination patterns, school achievement and performance, political participation, and integration.

5143 Communication in Bilingual Classrooms

(3-0) 3 hours credit.

Emphasis on oral and written communicative strategies for achieving full interaction among students in bilingual classrooms. Review of specialized teaching-related vocabularies needed to conduct instruction in two languages. Offered in Spanish.

5173 Sociocultural Issues and the Teaching of Reading

(3-0) 3 hours credit.

Study of how social, cultural, and linguistic factors affect the reading and writing practices of students and how school reading curriculum, instruction, and assessment can be designed to support students from differing sociocultural backgrounds. Special attention is given to the role that social class, dialect, gender, second language learning, and ethnicity play in literacy learning and teaching.

5193 Multicultural Literature for Children

(3-0) 3 hours credit.

A study of representative children's literature for, and about, the many culture groups in the Americas, with emphasis on Latinos and Latinas.

6033 Topics in Bicultural Studies

(3-0) 3 hours credit.

Examines topics of interest in bicultural studies and bilingual education. Possible topics include, but are not limited to, contemporary Chicano arts, Chicanas, Mexican American folklore, cultural factors in human resources development, and bilingual-multicultural school communities. May be repeated for credit when topics vary.

6043 Bilingual Education Research

(3-0) 3 hours credit.

Examines qualitative and quantitative methods and models applied to the field of bilingual education. Evaluation of community and school-based research that influences instructional policies and practices in bilingual programs.

- 6053 Testing Members of Bicultural-Bilingual Societies**
(3-0) 3 hours credit.
Issues of testing with nondominant ethnic populations; research projects in appropriate assessment of language and cognitive abilities for minority group members.
- 6063 Research Methods in Bilingual and Second Language Studies**
(3-0) 3 hours credit.
Research design for the study of linguistic, social, and psychological variables in bilingual, second language, and dialectally diverse populations; emphasis on designing and carrying out a research project.
- 6073 Ethnographic Research Methods in Bicultural-Bilingual Studies**
(3-0) 3 hours credit.
Multidisciplinary techniques to survey and analyze bicultural-bilingual dynamics in institutional and community settings, with emphasis on sociolinguistics, unobtrusive research methods, and research ethics.
- 6941-3 Internship in Bicultural/Multicultural Settings**
1 to 3 hours credit.
A supervised experience, relevant to the student's program of study, within selected community organizations. Must be taken on a credit/no credit basis, but no more than 3 hours will apply to a master's degree.
- 6951-3 Independent Study**
1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's program advisor and graduate advisor of record.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.
- 6961 Comprehensive Examination**
1 hour credit. Prerequisite: Approval of the appropriate graduate studies committee to take the Comprehensive Examination.
Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).
- 6973 Special Problems**
3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when the topics vary, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6983 Master's Thesis

3 hours credit. Prerequisites: Permission of the Graduate Advisor of Record and thesis director.

Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

**COURSE DESCRIPTIONS
ENGLISH AS A SECOND LANGUAGE
(ESL)**

5003 Linguistics for Second Language and Bilingual Specialists

(3-0) 3 hours credit.

Concepts in linguistics directed toward a broad understanding of human language, with particular attention to second language and bilingual contexts.

5013 Foundations of Second Language Acquisition

(3-0) 3 hours credit.

Study of principles, theories, and issues in second language acquisition and bilingualism, with implications for language teaching.

5023 Language Analysis for Second Language Specialists

(3-0) 3 hours credit.

Study of English grammar from descriptive and discourse perspectives, with consideration of cross-linguistic contrasts and of applications for teaching English as a second language.

5033 Second Language Reading

(3-0) 3 hours credit.

The relationship of reading acquisition to language learning, including oral language and writing development. The preparation and adaptation of thematic reading materials for various levels of proficiency. A critical evaluation of existing reading materials and literature available for second language learners.

5043 Listening and Speaking in Second Language Programs

(3-0) 3 hours credit.

Development, presentation, and evaluation of materials and strategies for teaching listening, speaking, and pronunciation to second language learners. Emphasizes current theories and development of oral proficiency.

5053 Second Language Instruction in School Contexts

(3-0) 3 hours credit.

Study of instructional strategies and materials, including available community resources. For teaching linguistically diverse students; emphasis on grades K-12.

- 5063 Language and Content-Area Instruction**
(3-0) 3 hours credit.
Theoretical and practical approaches to integration of language teaching with subject matter areas. Emphasis on oral language and literacy for academic purposes.
- 6013 Second Language Acquisition Research**
(3-0) 3 hours credit.
Investigation of second language acquisition from multiple perspectives through data-based studies.
- 6033 Topics in Second Language Acquisition and Teaching**
(3-0) 3 hours credit.
Suggested topics include, but are not limited to, discourse analysis and second language acquisition, technology and second language learning and instruction, and Universal Grammar and second language acquisition. May be repeated for credit when topics vary.
- 6043 Family and Adult Literacy in Language Minority Communities**
(3-0) 3 hours credit.
Theoretical and practical aspects of family and adult literacy development in language minority communities. Topics may include relationships between oral and written language; second language literacy; and relationships between literacy and social, economic, and political factors. Implications for program development and implementation.
- 6053 Program and Syllabus Design**
(3-0) 3 hours credit.
Theoretical and practical concerns in developing instructional programs to meet the objectives of second language learners, including English for Specific Purposes.
- 6063 Second Language Writing**
(3-0) 3 hours credit.
The relationship of writing to second language learning. Review of research on second language writing and examination of writing pedagogy for second language learners.
- 6943 Internship in English as a Second Language**
3 hours credit. Prerequisites: 18 semester credit hours of coursework in ESL and consent of instructor.
Supervised experience in teaching English as a Second Language. May be repeated for credit to a maximum of 6 hours. The internship does not apply toward the semester-credit-hour requirement for the degree program. The grade report is either CR (satisfactory performance) or NC (unsatisfactory performance).

6951-3 Independent Study

1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the division's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6973 Special Problems

(3-0)3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when the topics vary, but not more than 6 hours, regardless of discipline, will apply to the master's degree.

6983 Master's Thesis

3 hours credit. Prerequisites: Permission of the Graduate Advisor of Record and thesis director.

Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

DIVISION OF EDUCATION

Master of Arts Degree in Education

The Master of Arts degree in Education offers the opportunity for advanced study and professional development programs in seven fields of concentration:

Adult and Higher Education
 Curriculum and Instruction
 Early Childhood and Elementary Education
 Educational Leadership
 Educational Psychology/Special Education
 Reading and Literacy (pending program approval by the Texas Higher Education Coordinating Board)

Education concentrations provide specialized degree plans in one or more areas of program emphasis so that students may choose a plan suitable to their needs and objectives. Degree plans are designed to offer the opportunity to gain advanced levels of knowledge and professional competency for students engaged in or concerned about educational activity in schools, colleges, and other public or private institutions and agencies. Credit toward graduate-level certificates and certificate endorsements may be earned in conjunction with work toward the master's degree in most programs. Programs with a thesis option emphasize the development of research competencies critical to continued graduate-level study.

Program Admission Requirements. Applicants without adequate preparation in education may be required to complete preparatory courses as a condition of admission. Individuals who do not meet the grade-point average requirement may be required to submit Graduate Record Examination (GRE) scores for consideration in admission decisions. Contact the Division of Education for more information.

Degree Requirements. Education degrees have four required components: a core of common courses, a program emphasis, support work, and a comprehensive examination.

A. Core courses common to all concentrations:

EDU	5003	Research Methods in Education
EDP	5003	Psychological Learning Theories
C&I	5003	Theory and Dynamics of Curriculum and Instruction

3 semester credit hours selected from

EDU	5103	Contemporary Educational Philosophy
EDU	5113	Philosophical and Ethical Dimensions of Counseling
EDU	5203	Evolution of Educational Thought

B. Program emphasis. The program emphasis must consist of at least 12 semester credit hours in one of the fields of concentration. Some concentrations offer more than one program emphasis. A program emphasis may require up to 24 semester credit hours. Courses outside the specific concentration may be used to meet this requirement with advance approval of the student's supervisory

committee and the Graduate Advisor of Record. See individual concentration listings.

- C. Support work. Each student is required to select additional courses, with the approval of the program advisor and the Graduate Advisor of Record, to complete the degree requirements of 33 semester credit hours (with thesis) or 36 hours (without thesis). 9 semester credit hours must support the concentration. 3 additional hours must be taken with the approval of the Graduate Advisor of Record. In some degree programs support work may consist of additional courses in the area of concentration.

Students in the master teacher program, supervision programs, and college teaching programs take support courses in their teaching fields. Students in teacher certification programs may take their support work courses in areas that meet certification requirements. It is recommended that thesis students take EDU 5053 as part of the support work.

- D. Comprehensive examination. The student's supervisory committee is responsible for administering this examination. The examination may be repeated, but a student who has failed the examination two times must have the permission of his or her supervisory committee in order to take the examination a third or additional time. Ordinarily, failure to pass the examination should be followed by additional coursework or other work to remedy deficiencies or areas of weakness before the examination is retaken.

Summary of Degree Options

Option I. Thesis option (33 semester credit hours):

- A. Core. 12 semester credit hours required:

EDU	5003	Research Methods in Education
EDP	5003	Psychological Learning Theories
C&I	5003	Theory and Dynamics of Curriculum and Instruction

3 semester credit hours selected from

EDU	5103	Contemporary Educational Philosophy
EDU	5113	Philosophical and Ethical Dimensions of Counseling
EDU	5203	Evolution of Educational Thought

- B. Concentration. 12 semester credit hours of coursework to form a program emphasis in a single concentration

- C. Support work. 9 semester credit hours as follows:

EDU	5053	Inferential Educational Statistics (or approved substitution)
EDU	6983	Master's Thesis (taken twice for a total of 6 hours)

Option II. Nonthesis option (36 semester credit hours):

- A. Core. 12 semester credit hours required:

EDU	5003	Research Methods in Education
EDP	5003	Psychological Learning Theories
C&I	5003	Theory and Dynamics of Curriculum and Instruction

3 semester credit hours selected from

EDU	5103	Contemporary Educational Philosophy
EDU	5113	Philosophical and Ethical Dimensions of Counseling
EDU	5203	Evolution of Educational Thought

- B. Concentration. 12 semester credit hours of coursework to form a program emphasis in a single concentration
- C. Support work. 12 semester credit hours as follows:
- 9 hours of support courses
 - 3 hours of approved electives

Adult and Higher Education Concentration

This concentration offers the opportunity for advanced study for careers in educational institutions serving adult learners. Program emphases are offered for students preparing to teach in higher education and adult continuing education programs, and for those interested in administrative/managerial roles in institutions or agencies that serve adult education. The concentration is designed for students wishing to pursue a master's degree and those who wish to pursue further graduate study.

Adult and Higher Education Concentration emphases:

College and University Teaching
 College and University Administration
 Adult and Continuing Education

Curriculum and Instruction Concentration

The program emphases are focused on the theoretical and practical aspects of curriculum planning, development, implementation, and evaluation in all subject fields and at all educational levels. The concepts of curricular innovation and teaching excellence are stressed in conjunction with expanded knowledge of content fields and applied research. Students who want to specialize in a teaching field may do so by taking courses in that field to support the concentration in Curriculum and Instruction. Within this concentration, a student may specialize in the teaching of reading or in the supervision of instruction.

Curriculum and Instruction Concentration emphases:

Master Teacher
 Curriculum Specialist
 Instructional Media Specialist
 Reading Specialist

Early Childhood and Elementary Education Concentration

The concentration in Early Childhood and Elementary Education focuses on the broad spectrum of development and learning in children from infancy through preadolescence. Emphasis is on translating related research and theory into curriculum development and instruction, with the intent of helping children realize the best development possible in a multicultural society. This concentration is designed primarily for experienced classroom teachers at the early childhood and elementary levels, but it is also suitable for personnel in human services and other allied fields.

Educational Leadership Concentration

Students seeking to apply for management careers in public or private schools and school systems should follow programs in this concentration. The unique problems, processes, and expertise associated with effective personnel management and curriculum leadership are explored, developed, and tested in practical field-based settings, with an emphasis on applied research and human relations methodologies. The degree program and 9 specified semester credit hours are designed to meet midmanagement certification requirements.

Educational Psychology/Special Education Concentration

This concentration is designed for students interested in additional or advanced preparation for teaching exceptional children and youth. Students may elect from a variety of specific emphases. The program offers students the opportunity for theoretical understanding and clinical opportunities to develop and apply skills for working with disabled individuals.

Educational Psychology/Special Education Concentration emphases:

Generic Special Education
Severely Emotionally Disturbed and Autistic

Reading and Literacy Concentration

This concentration is designed to provide theory, research, knowledge, and field experiences for students who plan to teach reading and writing. Reading is presented as a linguistic, cognitive, and sociocultural process in relation to other language arts processes such as listening and speaking, with particular emphasis on writing and the writing process. Students select one of three program emphases: instruction, leadership, or research. The instruction emphasis is designed for teachers and can lead to completion of the requirements for certification as a reading specialist. The leadership emphasis is intended for students who want to work in leadership positions in literacy programs. The research emphasis is designed for students who want to

pursue research in reading and writing; students in this emphasis normally pursue the thesis option.

Pending program approval by the Texas Higher Education Coordinating Board.

Master of Arts Degree in Counseling

The Master of Arts degree in Counseling offers the opportunity for advanced study and professional development in the field of counseling. Students may earn credit toward a state-level counseling license to practice in community settings and certification to practice in the schools. A thesis option emphasizes the development of research competencies critical to continued graduate-level study.

Program Admission Requirements. Applicants without adequate background for counseling may be required to complete preparatory courses as a condition of admission. Individuals who do not meet the grade-point average requirement may be required to submit Graduate Record Examination (GRE) scores for consideration in admissions decisions. Letters of recommendation, a written statement of goals, and a personal interview may be required. Contact the Division of Education for more information. The number of students admitted to this program may be limited.

Degree Requirements. The course of study consists of three components: a core of required courses, a required or recommended set of support courses, and a comprehensive examination.

A. Core courses:

EDU	5003	Research Methods in Education
EDP	5003	Psychological Learning Theories
EDP	5203	Fundamentals of Guidance and Counseling
EDP	5213	Counseling Theories
EDP	5223	Psychological Assessment for Counseling
EDP	5233	Group Theory and Process
EDP	5393	Development of Counseling Skills
EDP	5693	Practicum in Counseling

B. Support courses (all are required for the nonthesis option, and one is required for the thesis option):

EDP	5033	Human Development across the Lifespan
EDP	5283	Counseling in a Multicultural Setting
EDP	6153	Career Development and Choice

One elective in counseling

C. Comprehensive examination. The comprehensive examination may be repeated, but students who fail the examination two times must have permission from their supervisory committee to take the examination additional times. Students who fail to pass the examination should take coursework or other work to remedy deficiencies before the examination they retake the exam.

Summary of Degree Options

Option I. Thesis option (33 semester credit hours):

- A. Core. 24 semester credit hours, as listed above.
- B. Support. 3 semester credit hours, as listed above. At the discretion of the student's supervisory committee, EDU 5053 Inferential Educational Statistics or EDP 5303 Principles and Techniques of Evaluation may be required in place of one of the listed support courses.
- C. EDU 6983 Master's Thesis (taken twice for a total of 6 hours)

Option II. Nonthesis option (36 semester credit hours):

- A. Core. 24 semester credit hours, as listed above.
- B. Support. 12 semester credit hours, as listed above.

Doctor of Education Degree in Educational Leadership

The primary objective of the doctoral degree program is to give graduates advanced academic training in educational leadership, particularly in the area of administrative and instructional leadership. Graduates should gain an advanced understanding of theories of education and learning; extensive theoretical background and experiences in emerging paradigms of organizational leadership; high-level research skills for developing, analyzing, and evaluating educational programs; and in-depth training for the increasing cultural and linguistic diversity of contemporary education. Students may pursue an emphasis in administrative leadership or instructional leadership. Administrative leadership focuses on managerial skills for improving educational effectiveness. Instructional leadership focuses on innovative programs to help solve critical literacy, technological, and sociocultural educational issues.

Program Admission Requirements. Applications are screened by faculty or a representative selection committee of the faculty. Applicants must meet the following criteria to be considered for admission:

1. a bachelor's degree from an accredited institution
2. a grade-point average of 3.0 or better out of a possible 4.0 in the last 60 hours of an undergraduate degree program
3. a master's degree in education or other appropriate field
4. a grade-point average of 3.5 or better out of a possible 4.0 in a master's degree program
5. a score of 1000 on the verbal and quantitative sections of the Graduate Record Examination (GRE)
6. for applicants whose native language is not English, a score of at least 550 on the TOEFL
7. demonstrated experience in a work environment where education is the primary professional emphasis (teaching, administration, curriculum development in elementary, secondary, postsecondary, governmental, or private industry settings)

8. three letters of recommendation from professionals who can discuss the applicant's potential administrative or instructional leadership capabilities

Applicants who meet initial screening requirements will be interviewed using a standardized format to determine their qualifications as prospective leaders in administration or instruction. Interviews are conducted by the Division of Education Doctoral Graduate Studies Committee. The process requires candidates to demonstrate problem-solving skills in individual and group settings. Those who pass the second-level screening requirements are admitted to begin the coursework portion of their program.

Degree Requirements. Degree candidates must complete 27 semester credit hours of core courses:

- A. Culture (9 hours). The social, cultural, and linguistic dynamics of current and future school populations; historical and cultural contexts of schooling in Texas and the Southwest; issues related to language and linguistic policies and education; and issues related to leadership within culturally diverse communities.
- B. Leadership (12 hours). Procedures and techniques of inquiry-based organizational development and leadership; effective leadership of culturally diverse school personnel; issues related to leadership of majority-minority schools; and the ethics of leadership.
- C. Methodology (6 hours). Research design; qualitative and quantitative research methods; uses of technology for data collection and analysis; and the role of research in school change.

After completing the core requirements, students take additional methodology and leadership courses and courses toward the administrative leadership or instructional leadership emphasis:

- A. Area of emphasis (12 hours). Development of knowledge and skills in administrative leadership or instructional leadership.
- B. Cognate support (9 hours). Students select a cognate area of support to enhance their emphases and the research for their dissertations. Courses are selected from graduate offerings throughout the University, and students must meet prerequisites for enrollment.
- C. Additional methodology and leadership support (12 hours). Students explore additional research methodologies and statistical analysis techniques in preparation for conducting the research for their dissertation.

Dissertation Requirement. Upon completion of the required 60 semester credit hours, students must pass a written and oral qualifying examination. They must also take 9 semester credit hours of Dissertation. The dissertation must meet these objectives:

1. The dissertation format creates strong University and school ties.
2. The dissertation's research team consists of a doctoral student and faculty member who work in collaboration with an educational institution to focus on a single issue.

3. Dissertation topics are linked to the goal of improving program effectiveness.
4. The dissertation demonstrates the scholarly quality of the student working with his or her committee.

Language Requirement. Students must exhibit oral and written proficiency in a language other than English. Given the nature of the program, students are advised to select Spanish.

In addition, each student must

1. Pass an oral defense of his or her doctoral proposal, conducted by the Dissertation Committee, that addresses the dissertation's potential for scholarly research as specified by University-wide requirements.
2. Maintain a grade-point average of 3.0 or higher (on a 4.0 scale) each semester for the entire doctoral program, as specified by University-wide requirements.
3. Complete an on-campus residency as a full-time student for two consecutive long semesters, or two full summer terms and one long semester (consecutively), or three full summers. No transfer students will be admitted to the program. However, up to 6 hours of transfer credit toward the degree may be accepted, provided that the graduate courses were taken at an accredited institution within the past three years and were not part of a degree program.

COURSE DESCRIPTIONS ADULT AND HIGHER EDUCATION (AHE)

5003 The Development of Higher Education in the United States
(3-0) 3 hours credit.

A study of the transition from patterns of European institutions of higher learning to the development of uniquely American institutions. Relates the development of human and physical resources to the changing role of higher education in American society.

5103 Contemporary Thought in Higher Education
(3-0) 3 hours credit.

A study of current thought as it relates to the management of institutions of higher education.

5203 The American College Student
(3-0) 3 hours credit.

The college student's role in contemporary society; characteristics, basic values, peer group influence, campus culture, needs, and pressures.

5313 Seminar in Governance of Higher Education
(3-0) 3 hours credit.

Analysis of current practices and issues in the governance of higher education that affect students, faculty, and administration; study of the scope and role of colleges and universities. (Credit cannot be earned for both AHE 5313 and EDL 5313.)

5323 Financing Higher Education

(3-0) 3 hours credit.

Examination of representative methods of state funding of public colleges and universities; elements of funding formulas; rationales for funding patterns; and policy implications of various funding methods for colleges and universities.

5333 Legal Issues in Higher Education

(3-0) 3 hours credit.

An overview of historic and contemporary influences of the U.S. and state constitutions, federal and state statutes, case law, and agency regulations that affect higher-education institutions and their administrators, faculties, and students.

5603 Development and Organization of Adult and Continuing Education

(3-0) 3 hours credit.

Exploration of forms of continuing and adult education conducted by business and industry, the armed forces, educational institutions, and private foundations, including federal and state programs of support; external and alternative degree programs; the open university concept and self-study programs; general treatment of historical development.

5613 Instructional Procedures in Continuing Education

(3-0) 3 hours credit.

Examination of instructional procedures appropriate in adult basic education, GED, community service and recreation courses, professional continuing education courses, initial training courses in corporate settings, and other noncredit offerings.

5623 Adult and Continuing Education Management Systems

(3-0) 3 hours credit.

Organization for adult and continuing education within a college or university and its relationship to the entire institution; staffing, training, directing, and controlling the continuing education effort; planning, programming, and budgeting; marketing and public relations; methods of determining the market; evaluation of administrative and academic performance. (Credit cannot be earned for both AHE 5623 and EDL 5623.)

5813 Adult Literacy

(3-0) 3 hours credit.

Examination of the acquisition and development of reading and writing in adult populations. Reviews research and issues relevant to the teaching of reading and writing to adults. (Formerly AHE 5803. Credit cannot be earned for more than one of the following: AHE 5813, AHE 5803, or C&I 5813.)

6003 The Community College

(3-0) 3 hours credit.

The historical and philosophical foundations for the community junior college movement in the United States are analyzed and utilized as a basis for understanding contemporary trends and problems of community junior colleges.

6063 Research in Adult and Higher Education

(3-0) 3 hours credit. Prerequisite: EDU 5003.

Consideration of the major research problem areas in adult and higher education, identification of problems in need of research, examination of research literature in selected areas, and study of research procedures unique to or especially useful in adult and higher education.

6073 Research Colloquium

(3-0) 3 hours credit. Prerequisites: EDU 5003 and AHE 6063.

Guided discussion of research in planning stages, in process, and recently completed by participants; opportunity for the organization of research teams or for planning of cooperative research; and opportunity for students engaged in research to obtain assistance in planning, data collection, data analysis, and preparation of reports.

6103 Effective Teaching in Higher Education

(3-0) 3 hours credit.

This seminar focuses on the image of the college professor and reviews the current research on the teaching and learning process at the college or university level. Includes a review of educational psychology of the late adolescent and adult, an investigation of new and effective instructional methods, and an appraisal of evaluation procedures.

6113 Teaching in the Community College

(3-0) 3 hours credit.

An analysis of teaching styles, techniques, and supporting materials and technology appropriate to instruction of the adult learner in a community college setting adapted to various disciplines and academic fields. The course includes strategies for determining instructional needs, appropriateness of instructional procedures to learning needs and styles, and modes of assessment, including the development and use of teaching portfolios. Where possible and appropriate, community college instructors use their own classrooms and disciplines as laboratory settings.

6953 Independent Study

3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, may be counted toward the master's degree.

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when the topics vary, but no more than 6 hours, regardless of discipline, may be counted toward the master's degree.

COURSE DESCRIPTIONS CURRICULUM AND INSTRUCTION (C&I)

5003 Theory and Dynamics of Curriculum and Instruction

(3-0) 3 hours credit.

An examination of theoretical structures underlying curriculum considerations and the implications of these for the work of responsible curriculum decision-makers at all levels, including administrators, instructional supervisors, and classroom teachers.

5013 Classroom Instruction and Evaluation

(3-0) 3 hours credit.

Examination of different pedagogical approaches to the teaching and learning process in elementary school, with emphasis on the development of curriculum for classroom instruction, evaluation, organization, and management.

5043 Classroom Management and Motivation

(3-0) 3 hours credit. Prerequisite: Graduate standing.

A detailed investigation of various theories and models of classroom management and motivation. Topics include behavior modification, assertive discipline, control theory, and the concept of the democratic classroom. (Credit can be earned for only one of C&I 5023, C&I 5043, and EDP 5043.)

5103 Individualizing Instruction

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An in-depth study of the tasks and problems associated with individualized instruction. Students are offered the opportunity to examine the means available for measuring and diagnosing individual learning needs and styles and for selecting alternative learning materials and environments appropriate to individual needs.

5303 Technology in Curriculum and Instruction

(3-0) 3 hours credit.

A study of emerging instructional technologies and innovative curriculum resources. The design, application, and evaluation of individualized, interactive resources such as personal computer-based, videodisc, and distance learning methodologies via voice, data, and television systems.

5313 Instructional Materials Production I: Graphics and Multimedia

(3-0) 3 hours credit. Prerequisite: C&I 5003 or consent of instructor.

The opportunity for preparation in the skills required for the production of a variety of materials for classroom use. The rationale for the use of media and the specifics of design and technical production procedures for the creation of effective instructional media formats are presented.

5343 Programming Instruction

(3-0) 3 hours credit. Prerequisite: C&I 5003 or consent of instructor.

Offers students the opportunity for preparation in the specific theory and skills of developing programmed instructional materials in traditional media

and computer-based interactive formats. S-R Theory as applied in the development of programmed instruction are examined. Students are expected to develop and developmentally test programmed instruction materials.

5403 Instructional Design and Development

(3-0) 3 hours credit. Prerequisite: C&I 5003 or consent of instructor.

The design of instruction. Special attention is given to theory and method of design based on congruence between identified needs and approaches to curriculum development.

5503 Curricula for Preschool and Primary Children

(3-0) 3 hours credit.

A systematic analysis of curricula for preschool and primary grade children, including a critical study of related objectives, organizational schemes, content teaching strategies, and materials. (Credit cannot be earned for both C&I 5503 and ECE 5503.)

5583 Study Strategies and Cognitive Processes in Reading

(3-0) 3 hours credit.

Reviews research that examines study strategies and cognitive processes for reading and learning in schools. Focuses on upper elementary through college study practices and higher-level reading and thinking. Field experience may be required.

5603 Curricula for Elementary School Children

(3-0) 3 hours credit.

A systematic analysis of elementary school curricula. A critical study of the objectives, methods of curricular organization, and content used with elementary school children grades 1–8. (Credit cannot be earned for both C&I 5603 and ECE 5603.)

5673 Critical Issues in Elementary School Teaching

(3-0) 3 hours credit.

Study of critical issues in the elementary school. Investigation of research, practices, and positions related to special education, bilingual and multicultural education, early childhood education, and other current broad-based social issues.

5703 Secondary School Curricula

(3-0) 3 hours credit.

A systematic analysis of secondary school curricula. A critical study of objectives, methods of organization, content, methods, and learning materials for youth.

5713 Introduction to Reading

(3-0) 3 hours credit.

Introduction to the reading process, overview of the development of reading, and examination of instructional issues associated with the teaching of reading. Required for students who have completed less than 6 hours of reading courses at the undergraduate level. (Credit cannot be earned for both C&I 5713 and C&I 5733.)

- 5723 Integrating Reading and the Language Arts**
(3-0) 3 hours credit.
Study of research and instructional practices that examine ways reading can be related to writing, speaking, and listening. Emphasizes development of integrated language arts curriculum and instruction from primary through secondary school.
- 5743 Reading in Secondary School**
(3-0) 3 hours credit.
Principles and techniques for teaching higher-level reading and comprehension skills to improve proficiency in learning various academic subjects in middle and secondary schools. Strategies for meeting the needs of the wide range of ability levels found in secondary schools.
- 5753 Literature for Children and Adolescents**
(3-0) 3 hours credit.
Examines the selection and uses of children's and adolescent literature in the classroom. Emphasizes ways to integrate literature into the elementary and secondary school curriculum.
- 5763 Diagnosis and Practicum in Reading**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Multidisciplinary approach to diagnosis and remediation of reading problems, with special attention to cognitive, sociolinguistic, and emotional factors that may impede learning. Application of diagnostic and remedial procedures with individual children through a guided field-based practicum. (Credit cannot be earned for both C&I 5763 and C&I 5773.)
- 5783 Survey of Reading Research**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
A review of past and current literature and research concerning the reading process, curricula, and instructional practice. Opportunity for students to acquire critical analysis skills in evaluating research.
- 5793 Seminar in Reading Supervision**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Organization of developmental and remedial reading and writing programs. Selection of appropriate materials. Techniques and procedures for maintaining quality programs, including staff selection and inservice training. The role of research in improving the teaching of reading and writing.
- 5813 Adult Literacy**
(3-0) 3 hours credit.
Examination of the acquisition and development of reading and writing in adult populations. Reviews research and issues relevant to the teaching of reading and writing to adults. (Credit cannot be earned for both C&I 5813 and AHE 5813.)

5823 Reading and Writing Development in Early Childhood

(3-0) 3 hours credit.

Study of the literacy development of young children from birth to the point of acquisition of conventional reading and writing ability. Examines young children's emergent literacy concepts and behaviors and considers ways that early childhood educators can develop appropriate approaches to teaching reading and writing in classroom settings.

5833 Assessment Issues and Practices in Reading

(3-0) 3 hours credit.

Examination of techniques to assess student reading and writing. Considers strengths and weaknesses of assessment tools such as standardized tests, informal observations, and portfolios, and ways educators may best use the results from these approaches to provide appropriate instruction for all students.

5903 Higher Education Curricula

(3-0) 3 hours credit.

A systematic analysis of higher education curricula. A critical study of objectives, methods of organization, content, methods, and learning materials used with college students. (Credit cannot be earned for both C&I 5903 and C&I 5803.)

6003 Supervision: Theoretical Basis

(3-0) 3 hours credit. Prerequisite: C&I 5003 or consent of instructor.

An application of leadership theory, curriculum development theory, educational planning theory, general learning theory, and theories of adult learning to instructional supervision; an examination of the role of the supervisor. (Credit cannot be earned for both EDL 6003 and C&I 6003.)

6013 Supervision: Teaching-Learning Process

(3-0) 3 hours credit. Prerequisite: C&I 6003 or consent of instructor.

The analysis and application of theories related to the teaching and learning process; study of the principles and practices in the professional development of teachers. (Credit cannot be earned for both C&I 6013 and EDL 6013.)

6023 Supervision: Tools and Techniques

(3-0) 3 hours credit. Prerequisite: C&I 6003 or consent of instructor.

A study of impact strategies in instructional supervision and the development of communication and interpersonal skills needed for working with teachers. (Credit cannot be earned for both C&I 6023 and EDL 6023.)

6303 Advanced Methods in Subject-Matter Fields

(3-0) 3 hours credit. Prerequisite: C&I 5003 or consent of instructor.

Course sections are designed to offer students the opportunity to develop skill in instructional methodology specifically related to and derived from the characteristics of the discipline taught.

1. Science
2. Mathematics
3. Social Studies
4. Language Arts

5. Foreign Languages
 6. Physical and Health Education
 7. Integrated Math/Science
- May be repeated for credit when disciplines vary.

6353 Multimedia Production

(3-0) 3 hours credit.

Provides instruction on the development of computer-aided multimedia presentations and interactive applications. Students use Microsoft PowerPoint and Macromedia Director to apply concepts of effective production management, interface design, and educational psychology. Supplementary instruction includes photo scanning, audio and video capture, and graphics creation. (Credit cannot be earned for both C&I 6353 and MUS 6353.)

6403 Instructional Procedures for Severely/Profoundly Handicapped Children and Youth

(3-0) 3 hours credit.

A study of theories, methodologies, and instructional practices for educating severely handicapped children and youth, including those who are emotionally disturbed or autistic, in a variety of delivery arrangements.

6503 Advanced Topics in Educational Technology

(3-0) 3 hours credit. Prerequisite: C&I 5303 or consent of instructor.

Course sections are designed to offer students the opportunity to develop skills in educational technology related to and derived from the characteristics of the topics taught.

1. Computers in the Schools
2. Distance Learning
3. Web Design and Applications for Schools
4. Multimedia

6953 Independent Study

3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when the topics vary, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

**COURSE DESCRIPTIONS
EARLY CHILDHOOD AND
ELEMENTARY EDUCATION
(ECE)**

- 5123 Seminar in Development in Early Childhood and Infancy**
(3-0) 3 hours credit. Prerequisite: EDP 5013 or consent of instructor.
Studies of the results of stimulating sensory equipment in the early years and investigation of insufficient psychological and physiological nourishment. Includes relevant research-suggested practices that may enable future generations to avoid developmental disruptions and alleviate existing developmental handicaps.
- 5133 Language Development in Preschool-Primary Children**
(3-0) 3 hours credit.
Study of early acquisition and development of language skills. Emphasis on identifying the sequence of normal expressive and receptive language development in terms of the child's related abilities and learning experiences. Language acquisition in linguistically and culturally diverse children. Identification of atypical patterns of language development.
- 5453 Classroom Behavior Problems in Children**
(3-0) 3 hours credit. Prerequisite: EDP 5003 or consent of instructor.
A survey of common behavioral problems encountered by teachers in elementary and early childhood classrooms. Emphasis on understanding factors that influence the development of such problems in school-age children and on curricula considerations affecting or affected by classroom behavior.
- 5473 Specialized Instruction in Early Childhood and Elementary Education**
(3-0) 3 hours credit. Prerequisite: C&I 5503, ECE 5503, or consent of instructor.
Identification, description, analysis, and evaluation of examples of specialized instruction as related to needs of learners, characteristics of subject matter, and demands of an environment.
- 5503 Curriculum for Preschool and Primary Children**
(3-0) 3 hours credit.
Opportunity is provided for a systematic analysis of curricula for preschool and primary grade children, including a critical study of related objectives, organizational schemes, content teaching strategies, and materials. (Credit cannot be earned for both ECE 5503 and C&I 5503.)
- 5513 Materials, Methods, and Techniques in Teaching Early Childhood Education**
(3-0) 3 hours credit.
A study of the methodologies and techniques effective in teaching preschool and elementary school children. Participants construct and use materials for teaching at the level of student ability. (Credit cannot be earned for both ECE 5513 and C&I 5513.)

- 5523 Curriculum Planning for Early Childhood and Elementary Education**
(3-0) 3 hours credit.
An analysis of the basis for curriculum planning in early childhood and elementary content areas; consideration of developmental levels, domains of learning, and taxonomies of objectives, with special attention to the role of the teacher and the student, the uses of materials, the classroom environment, and special student populations. (Credit cannot be earned for both ECE 5523 and C&I 5523.)
- 5603 Curricula for Elementary School Children**
(3-0) 3 hours credit.
A systematic analysis of elementary school curricula. A critical study of the objectives, methods of curricular organization, and content used with elementary school children grades 1–8. (Credit cannot be earned for both ECE 5603 and C&I 5603.)
- 6123 Administration of Early Childhood Programs**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
A study of the organization, structure, and operation of preschool and primary programs in various settings. Includes implications for elementary education.
- 6163 Biological Basis of Child Development**
(3-0) 3 hours credit. Prerequisite: One course in general biology or general psychology or consent of instructor.
Analysis of biological and psychological perspectives on child growth and development. Emphasis on theoretical aspects of biopsychological and social factors influencing cognitive and learning functions.
- 6183 Seminar in Early Childhood Education in Cross-Cultural Perspective**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An examination of contrasting strategies of socialization employed by societies around the world, past and present; limit of and alternatives to formal early childhood education in the current Western sense. Readings are drawn from ethnographic and theoretical sources in anthropology, psychology, and education.
- 6213 Current Issues in Early Childhood and Elementary Education**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Studies of current issues and problems in preschools and elementary schools and other educational settings. Investigation of research, practices, and positions related to the issues studied. Exploration of available models for possible solutions or resolution of issues, as well as factors that may have an impact on desired outcomes.
- 6303 Advanced Methods in Early Childhood and Elementary Education**
(3-0) 3 hours credit. Prerequisite: C&I 5003 or consent of instructor.
Specialized studies in early childhood and elementary education are offered through course sections in these areas:
1. Science
2. Mathematics
3. Social Studies

4. Language Arts
5. Fine and Performing Arts
6. Play
7. Nutrition and Health
8. Educational Technology

May be repeated for credit when curriculum areas vary.

6453 Assessment and Evaluation in Early Childhood and Elementary Education

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

Evaluation and research on student development and learning, educational programs, processes, products, instructional objectives, and alternative approaches to attain objectives. A disciplined inquiry into trends and issues in assessment and evaluation in early childhood and elementary education.

6473 Seminar in Elementary Education

(3-0) 3 hours credit.

Examination of the discipline of the subject-field selected (e.g., science, social studies, music), including an intensive study of research findings, publications of related professional organizations, and advanced experimentation related to teaching and learning situations.

6513 Advanced Approaches to Interdisciplinary Teaching

(3-0) 3 hours credit.

Review of theory and practice in interdisciplinary teaching and learning in elementary education. Emphasis on understanding the conceptual interrelationships of the fields of study in the elementary curriculum.

6523 Community Resources in Elementary Education

(3-0) 3 hours credit.

Examination of the diversity of community resources for elementary education. Students systematically examine ways to integrate local and regional resources into the teaching and learning process.

6643 The Teacher as Researcher

(3-0) 3 hours credit. Prerequisite: EDU 5003.

Application of research concepts and skills to classroom field studies. Participants conduct directed research on classroom practice in the elementary school.

6943 Instructional Internship

(1-8) 3 hours credit. Prerequisite: Approval of graduate advisor.

Individually supervised full-time field experience in assigned classrooms for one semester. May be repeated for credit.

6953 Independent Study

3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated

for credit, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when topics vary, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

COURSE DESCRIPTIONS EDUCATION (EDU)

5003 Research Methods in Education

(3-0) 3 hours credit. Prerequisite: Admission to graduate program or consent of instructor.

Basic concepts of research design; strategies of experimental, historical, and descriptive research; and basic statistical procedures are introduced. Participants use these concepts to read, interpret, and evaluate educational research and to plan and conduct such research. A field study may be required.

5053 Inferential Educational Statistics

(3-0) 3 hours credit. Prerequisites: EDU 5003 and STA 5073, or consent of instructor.

The concept of inferential statistics in education as a means of drawing conclusions and interpreting results. Statistical techniques often used in educational research are introduced with the intent of having students elect the appropriate statistical procedure and interpret the results.

5103 Contemporary Educational Philosophy

(3-0) 3 hours credit.

Philosophical analysis of issues in American education. Consideration is given to ethical and epistemological implications of issues with an emphasis on the evaluation of arguments for the adoption of educational policy.

5113 Philosophical and Ethical Dimensions of Counseling

(3-0) 3 hours credit.

Examination and analysis of the philosophical traditions undergirding contemporary counseling. Emphasis given to analysis of ethical issues having an impact on the counseling profession.

5203 Evolution of Educational Thought

(3-0) 3 hours credit.

An examination of the major educational thinkers in western civilization and a review of past institutional arrangements for education.

5303 Theory and Dynamics of Intercultural Interaction in Education

(3-0) 3 hours credit.

Theoretical perspectives of intercultural education. Examination of the research base and trends and barriers in research. Selected applications pertinent to successful intercultural interaction in the student's professional role. Recommended for students preparing for careers involving international participation, especially in education-based programs.

5403 Education, Cultural Differences, and Acculturation

(3-0) 3 hours credit.

Educational changes and adjustments resulting from the interaction of a variety of different cultural backgrounds in the modern school. Specialized techniques, processes, and programs designed to meet the unique learning needs of the non-English-speaking child.

5503 Seminar in Social Foundations of Education

(3-0) 3 hours credit.

Examination and analysis of social structures, values, and cultures as they interact with educational systems. Emphasis is on the urban environment and its particular relationships with education.

5603 Contemporary Issues in Education

(3-0) 3 hours credit. Prerequisite: EDU 5003 or consent of instructor.

Identification and analysis of the major contemporary educational issues, evaluation of attempted historical resolutions, and review of information relevant to policy decisions.

5703 Microcomputer Applications for Educational Settings

(3-0) 3 hours credit. Prerequisite: CS 5003 or consent of instructor.

A study of the operations and applications of microcomputers in educational settings. Emphasis on the development and testing of such applications in an educational environment.

5803 Juveniles, Schools, and the Law

(3-0) 3 hours credit.

An examination of the problem and extent of delinquent behavior particularly as it relates to the school. Designed to familiarize school personnel with the problems of schools and law enforcement agencies with respect to delinquent behavior, and with strategies for dealing with these problems.

6603 Seminar in Educational Research

(3-0) 3 hours credit. Prerequisite: Completion of no less than 30 semester hours of degree program.

Each student is expected to develop plans for a research project related to an educational issue, collect and analyze data to carry out the research, prepare a research report, and participate in research seminars.

6953 Independent Study

3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or

not often available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the appropriate Graduate Studies Committee to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when the topics vary, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6983 Master's Thesis

3 hours credit. Prerequisites: Permission of the Graduate Advisor of Record and thesis director.

Thesis research and preparation. May be repeated for credit, but no more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

COURSE DESCRIPTIONS EDUCATIONAL LEADERSHIP (EDL)

5003 Introduction to School Administration

(3-0) 3 hours credit. Prerequisite: One year of teaching experience or consent of instructor.

Introduction to the roles, tasks, and problems of positions in educational administration and their relationship to local, state, and federal government agencies.

5103 General Finance and Taxation in Education

(3-0) 3 hours credit. Prerequisite: EDL 5003 or consent of instructor.

Survey of current designs in educational finance of public school districts, review of general concerns, and practices of the appropriate local, state, and federal government agencies.

5203 School and Community Relations in Education

(3-0) 3 hours credit. Prerequisite: EDL 5003 or consent of instructor. Introduction to the strategies and design models for informing local business taxpayers and clientele about educational activities; study of models for participation and analysis of interaction models.

5303 Human Relations in Educational Administration

(3-0) 3 hours credit. Prerequisite: EDL 5003 or consent of instructor. Analysis and identification of group processes and individual behaviors that tend to enhance democratic interaction in the achievement of educational goals. Consideration of supportive roles requisite to the supervision of professionals in the educative process.

5403 The Principalsip: Educational Unit and Site Administration

(3-0) 3 hours credit. Prerequisite: EDL 5003 or consent of instructor. Analysis of the principal's or comparable position's role and the requisite interaction with various referent groups. Emphasis is on administration of academic programs. Applicable to all levels of common school.

5503 Administration and Function of Special Programs

(3-0) 3 hours credit. Prerequisite: EDL 5003 or consent of instructor. Identification and analysis of models and designs for the administration, development, supervision, and support programming of special education, guidance, vocational and technical education, and other alternative and support functions in education.

5603 Seminar in Applied Research in Educational Leadership

(3-0) 3 hours credit. Prerequisites: EDU 5003, EDL 5003, and consent of instructor.

Introduction to identification, analysis, and design formulation of applied research problems in educational leadership. Practice in conducting searches, elementary analysis, and deriving appropriate conclusions from applied studies. Students are required to complete and articulate an approved applied research design in prescribed form.

5703 Legal Foundations in Education

(3-0) 3 hours credit.

Survey of current legal basis and practices in the policy administration of education and review of significant court decisions pertaining to educational operations. Emphasis on rights and responsibilities of teachers and students and legislation related to multicultural institutional operations.

6003 Supervision: Theoretical Basis

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An application of theories of curriculum development, educational planning, learning, and human relations to instructional supervision; an examination of the role of the supervisor. (Credit cannot be earned for both EDL 6003 and C&I 6003.)

- 6013 Supervision: Teaching-Learning Process**
(3-0) 3 hours credit. Prerequisites: EDL 6003 or consent of instructor.
The analysis and application of models of the teaching and learning process to instructional supervision; the study and application of content, interaction, and climate analysis techniques. (Credit cannot be earned for both EDL 6013 and C&I 6013.)
- 6023 Supervision: Tools and Techniques**
(3-0) 3 hours credit. Prerequisites: EDL 6003 or consent of instructor.
A study of impact strategies in instructional supervision and the development of communication and interpersonal skills needed for working with teachers. (Credit cannot be earned for both EDL 6023 and C&I 6023.)
- 6103 Personnel Administration in Education**
(3-0) 3 hours credit. Prerequisite: EDL 5003 or consent of instructor.
Survey of roles, responsibilities, and functions of personnel officers in education; studies in general personnel policies; review of administration of insurance, salary, retirement, sick leave, and other programs operated under personnel administration.
- 6203 Educational Facilities and Capital Funds Administration**
(3-0) 3 hours credit. Prerequisite: EDL 5003 or consent of instructor.
Survey of models, policies, and procedures for the effective development, planning, use, and management of educational facilities and capital funds. Emphasis is on meeting curricular program needs.
- 6303 Ethics and Educational Leadership**
(3-0) 3 hours credit. Prerequisites: EDL 5003 and or consent of instructor.
This course provides an ethical perspective of educational issues in the public school setting, illustrates a leadership model based on social responsibility in a democratic society; and provides a paradigm for ethical decision-making based on the values of fairness, justice, equity, and inclusion.
- 6313 Seminar on School Problems**
(3-0) 3 hours credit. Prerequisite: EDL 5003.
Intended to help students identify significant school policy-generated problems, discern underlying causes, propose strategies, develop alternative paradigms to address the problems, and critically analyze the short- and long-term effects on the organization, its members, and its mission.
- 6323 Administration of Urban/Multicultural Institutions**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Provides practicing and potential urban educational leaders with knowledge of contemporary conditions and positive models for effective educational administrative designs, including alternative educational delivery systems.
- 6333 Creating Change**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
This course stresses the basics of change found in all self-help groups: recognizing reality, building support, recognizing success, and sustaining effort through failed attempts. Students learn to facilitate the change process

in an institution by forming change groups and developing a sense of community among group members.

6403 Survey of Organization and Administration Theory in Education

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

General studies in current theories applicable to educational administration. Emphasis includes understanding theory and research from related academic fields. Requirements include reviews of related research and understanding of appropriate research designs.

6503 Superintendent's Seminar

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

A field-based course designed for students preparing for educational leadership at the school district level. Enrollment is required each semester a student desires to fulfill a requirement for Texas school superintendent certification. Students develop an independent field-based study component in four certification areas: personnel administration, educational funds and facilities management, survey of organization and administration theory in education, and organizational systems analysis. Students are required to participate in 100 hours of clinical experience related to the certification area they seek to fulfill. May be repeated four times for credit.

6943 Internship in Educational Administration

(1-8) 3 hours credit. Prerequisites: EDL 5003, 5103, 5603, 5703, and consent of instructor.

Individually supervised field experience with unit-level or institutional-level educational administrators with related applied research activity. Must be taken for both midmanagement and superintendency certification. May be repeated for a total of 6 semester hours.

6953 Independent Study

3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when topics vary, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

COURSE DESCRIPTIONS EDUCATIONAL PSYCHOLOGY (EDP)

- 5003 Psychological Learning Theories**
(3-0) 3 hours credit.
A comprehensive analysis of human learning through an examination of major concepts and results of research on how learning occurs; also, the mental processes involved in learning and the application of these principles.
- 5033 Human Development across the Life Span**
(3-0) 3 hours credit.
A study of major theories and issues related to developmental change across the life span, including implications for education and counseling.
- 5043 Classroom Management and Motivation**
(3-0) 3 hours credit.
A detailed investigation of various theories and models of classroom management and motivation. Topics include behavior modification, assertive discipline, control theory, and the concept of the democratic classroom. (Credit can be earned for only one of C&I 5023, C&I 5043, and EDP 5043.)
- 5203 Fundamentals of Guidance and Counseling**
(3-0) 3 hours credit.
Professional issues and job roles of school and community counselors are explored. Emphasizes ethics of professional practice and diversity issues. Observational experience is required.
- 5213 Counseling Theories**
(3-0) 3 hours credit.
Major counseling theories and techniques are presented. Students investigate affective, behavioral, and cognitive psychotherapeutic strategies.
- 5223 Psychological Assessment for Counselors**
(3-0) 3 hours credit. Prerequisites: EDU 5003 and EDP 5203.
Introduction to measurement theory, assessment strategies, and individual- and group-administered techniques, including standardized tests. Emphasis on analysis and interpretation of assessment results for treatment planning. Casework is required.
- 5233 Group Theory and Process**
(3-0) 3 hours credit. Prerequisites: EDP 5203 and 5213.
A study of small group theory, research, and procedures. Provides the basis for effective group membership and leader behavior. Participation in group counseling is required.
- 5243 Counseling Individuals with Behavior and Emotional Disorders**
(3-0) 3 hours credit. Prerequisites: EDP 5203 and 5213.
Counseling interventions with behavioral and emotional disorders; symptomatology for psychoses, emotional disorders, and maladaptive behavior patterns.

5263 Child and Family Counseling

(3-0) 3 hours credit.

The emotional and behavioral disorders of childhood and adolescence are discussed. Family systems theory and strategies for counseling with children and families are presented. Casework is required.

5283 Counseling in a Multicultural Setting

(3-0) 3 hours credit. Prerequisite: EDP 5203.

A study of major issues of cross-cultural counseling. The impact of diversity (within and between group differences) is examined.

5303 Principles and Techniques of Evaluation

(3-0) 3 hours credit.

Introduction to program evaluation and the development and analysis of instruments.

5323 Advanced Psychological Assessment

(3-0) 3 hours credit. Prerequisite: EDP 5223.

Theory and application of specific instruments and techniques, including administration and scoring. Emphasis on analysis, interpretation, and integration of ability, achievement, and personality assessment results for diagnostics as well as treatment planning. Casework is required.

5393 Development of Counseling Skills

(3-0) 3 hours credit. Prerequisites: EDP 5003, 5033, 5203, 5213, and 5223.

Focus on sequential learning of counseling skills and their practical application. Counseling sessions are recorded and evaluated.

5403 Exceptional Children and Youth in the Schools

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An introduction to and survey of the field of special education. Characteristics, etiology, definition, and prevalence of exceptional children; description of available services; field experiences.

5413 Children and Youth with Mental Retardation

(3-0) 3 hours credit. Prerequisite: EDP 5403 or consent of instructor.

This course presents the opportunity for special education teachers and students in related fields to acquire an understanding of contemporary theories and practices used in the assessment, diagnosis, and treatment of individuals with mild to profound mental retardation in school and community settings. Trends and research in the education of students with mental retardation are studied.

5423 Applied Behavior Analysis for Classroom Teachers

(3-0) 3 hours credit. Prerequisite: EDP 5403 or consent of instructor.

Principles and procedures of applied behavior analysis and classroom management to facilitate the acquisition and improvement of social, academic, and life skills of children and youth with disabilities. Requires an applied project.

- 5443 Conference and Consultative Skills in Special Education**
(3-0) 3 hours credit. Prerequisite: EDP 5403 or consent of instructor.
This course presents the opportunity for special education teachers to acquire knowledge and skill working with parents, teachers, and other professionals to optimize the educational and therapeutic experiences of exceptional children and youth. Students plan, implement, and evaluate a series of parent conferences, staff development, and consultative activities.
- 5453 Children and Youth with Learning Disabilities**
(3-0) 3 hours credit. Prerequisite: EDP 5403 or consent of instructor.
A study of the incidence, prevalence, etiology, and characteristics of the student with learning disabilities (LD). The relationship between LD, child development, school environment, and academic performance are studied. Emphasis is on a critical analysis of instruction and assessment techniques used with this population.
- 5463 Language Development and Cognitive Intervention for Individuals with Disabilities**
(3-0) 3 hours credit. Prerequisite: EDP 5403 or consent of instructor.
This course presents methods and procedures for assisting individuals identified as mildly to moderately disabled to achieve communicative competence through language acquisition and remedial and corrective interventions. Emphasis is on the language arts needs (listening, speaking, reading, and writing) of individuals with learning and behavior disabilities.
- 5473 Behavior Analysis and Intervention for Children and Youth with Severe/Profound Disabilities**
(3-0) 3 hours credit. Prerequisite: EDP 5403 or consent of instructor.
Principles and procedures of behavior analysis and intervention for the acquisition and improvement of skills of the severely disabled. An applied behavior analysis project is required.
- 5543 Children and Youth with Behavior Disorders**
(3-0) 3 hours credit. Prerequisite: EDP 5403 or consent of instructor.
Presents opportunities for special educators and students in related fields to obtain an understanding of various theories and practices used in the identification, treatment, and education of behavior disorders. Research on the education of children and adolescents with behavior disorders as well as practical implications for the classroom teacher are emphasized.
- 5553 Assessment and Evaluation of Handicapped Children and Youth**
(3-0) 3 hours credit. Prerequisite: EDP 5403 or consent of instructor.
This course offers students the opportunity to develop knowledge and skills in selection, administration, and interpretation of instruments and procedures to evaluate individuals with disabilities. Emphasis is on assessment techniques, instruments, and procedures relevant to the education of disabled children and youth.

- 5563 Practicum in Special Education: Children and Youth with Mild/Moderate Disabilities**
(3-0) 3 hours credit. Prerequisites: EDP 5403 and consent of instructor.
The application of theoretical principles to field settings. Students are required to develop, implement, and evaluate educational programs for children and youth with mild to moderate disabilities.
- 5593 Practicum in Special Education: Behavior Disorders**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
The application of theoretical principles to field settings. The student works in educational settings to plan, implement, and evaluate appropriate experiences with emotionally disturbed students.
- 5693 Practicum in Counseling**
(3-0) 3 hours credit. Prerequisites: EDP 5203, 5213, 5223, 5233, and 5393, and 3 additional hours of coursework in counseling at UTSA. Students must apply for permission to enroll one semester in advance. (Thesis students may omit one prerequisite course as agreed upon by the supervisory committee.)
Offers the opportunity for supervised field work in a counseling setting. May be repeated for credit to a maximum of 9 hours.
- 6153 Career Development and Choice**
(3-0) 3 hours credit. Prerequisite: EDP 5203.
A study of theories of occupational choice and career development and their application to the guidance and counseling process. Identification and utilization of various types of occupational information and resources in counseling interviews and guidance programs.
- 6203 Curriculum and Instructional Applications for Children and Youth in Special Education**
(3-0) 3 hours credit. Prerequisite: EDP 5403, 5553, or consent of instructor.
Provides students with an opportunity to engage in the analysis of curriculum planning and implementation of a variety of instructional methods, procedures, and strategies appropriate for the implementation of mandated Individual Family Service Plans, Individual Education Programs, and Individual Transition Plans for children and youth with disabilities. (Credit cannot be earned for both EDP 6203 and C&I 6203.)
- 6953 Independent Study**
3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when topics vary, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

**COURSE DESCRIPTIONS
KINESIOLOGY AND HEALTH
(KAH)**

5003 Current Trends in Physical and Health Education

(3-0) 3 hours credit.

Students have the opportunity to examine current development in theories and practices of physical education. Recent research and literature are examined for causes and consequences of today's issues, trends, and problems.

5013 The Role of Sport in Society

(3-0) 3 hours credit.

Examination of sport and physical activity, sport's impact on society, and the affective roles sport takes as part of our social structure and the institution of education.

5023 Management of Kinesiology and Health Programs

(3-0) 3 hours credit.

An examination of the various functions involved in the management of a sport-, health-, or recreation-related organization. Topics include budgeting, facilities, scheduling, promotion, and liability.

5033 Sport and Exercise Psychology

(3-0) 3 hours credit.

A study of cognition and behaviors related to participation in sport and physical activity. Survey of contemporary research in motivation in sport, sport psychology, performance enhancement, psychological effects of exercise, and exercise adherence.

5043 Child and Adolescent Health Promotion

(3-0) 3 hours credit.

Examines the multifaceted determinants of health for children and adolescents (environmental, behavioral, developmental, biological, and social) with special emphasis on the roles of the family, school, and community. Models and theories of health behavior, risk-taking, and challenges to health care delivery for these populations will be investigated.

5063 Health Behaviors

(3-0) 3 hours credit.

A study of the determinants of human behavior as they relate to current health issues. Health behavior models and underlying rationales for prevention and intervention strategies will be examined.

6953 Independent Study

(3-0) 3 hours credit. Prerequisite: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record.

Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6973 Special Problems

3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when topics vary, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

**COURSE DESCRIPTIONS
SECONDARY EDUCATION
(SED)**

6953 Independent Study

3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, may be counted toward the master's degree.

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when the topics vary, but no more than 6 hours, regardless of discipline, may be counted toward the master's degree.

**COURSE DESCRIPTIONS—DOCTORAL LEVEL
CURRICULUM AND INSTRUCTION
(C&I)**

7003 Technology in Curriculum and Instruction

(3-0) 3 hours credit.

A study of emerging instructional technologies and innovative curriculum resources. The design, application, and evaluation of individualized interactive resources such as personal computer-based, videodisc, and distance-learning methodologies with voice, data, and television systems.

7013 Advanced Methods in Subject-Matter Fields

(3-0) 3 hours credit. Prerequisite: C&I 5003 or consent of instructor.

Course sections are designed to offer students the opportunity to develop skill in instructional methodology that is specifically related to and derived from the characteristics of the discipline taught.

1. Science
2. Mathematics
3. Social Studies
4. Language Arts
5. Foreign Languages
6. Physical and Health Education

May be repeated for credit when disciplines vary.

COURSE DESCRIPTIONS—DOCTORAL LEVEL EDUCATION (EDU)

7053 Inferential Statistics

(3-0) 3 hours credit. Prerequisites: EDU 5003 and STA 5073 or consent of instructor.

The concept of inferential statistics in education as a means of drawing conclusions and interpreting results is a central theme in research design. Statistical techniques used in educational research are introduced; students elect the appropriate statistical procedure and interpret the results.

7103 Qualitative Research

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

Definition of and rationale for qualitative research. Delineation of procedures used in qualitative research: problems, hypotheses, data collection and analysis, conclusions, and significance of findings.

7113 Educational Research Statistics: Descriptive and Comparative

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

Review of descriptive statistics, study of comparative statistics including t-tests and ANOVA, reporting and plotting functions, and Chi-square applications.

7123 Educational Research Statistics: Relational and Nonparametric

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

Review of basic correlation techniques; detailed study of uses of partial and multiple regression and canonical correlation; study of nonparametric and advanced statistics.

7133 The Role of Research in Educational Environments

(3-0) 3 hours credit. Prerequisites: EDU 5053 or EDU 7113 and EDU 7123.

Application of research techniques in school-based settings. Students design research proposals using qualitative and quantitative perspectives and pilot test them in an educational environment.

7213 Historical and Philosophical Studies of Twentieth-Century Educational Reform Movements

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

Examination of the historical and philosophical roots of twentieth-century educational reform movements. Analysis and evaluation of effectiveness of alternative approaches and reform programs for culturally diverse populations.

7223 Learning in a Culturally and Linguistically Diverse Society: Infancy through Adulthood

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

Examination of development changes throughout the lifespan from a variety of theoretical perspectives. Emphasis on psychological, anthropological, and sociolinguistic principles and their application to learning and teaching in a culturally and linguistically diverse society.

7403 Education, Cultural Differences, and Acculturation

(3-0) 3 hours credit.

Study of educational changes and adjustments resulting from the interaction of different cultures in the modern school. Specialized techniques, processes, and programs designed for the learning needs of the non-English-speaking child.

**COURSE DESCRIPTIONS—DOCTORAL LEVEL
EDUCATIONAL LEADERSHIP
(EDL)**

7103 Administration of Urban/Multicultural Institutions

(3-0) 3 hours credit.

Provides practicing and potential urban educational leaders with knowledge of contemporary conditions and positive models for effective educational administrative designs, including alternative educational delivery systems.

7133 Topics in Administration

(3-0) 3 hours credit.

Study and analysis of contemporary issues related to administration, including educational facilities and capital fund administration, school finance, strategic and operational planning, personnel management, and program evaluation. May be repeated for credit when topics vary.

7273 Examining School Populations, Structures, and Culture

(3-0) 3 hours credit. Prerequisite: EDU 7223 or consent of instructor.

Development of an analytical framework for intervening in political and organizational systems to accomplish educational missions and establish a sense of community in school culture.

- 7563 Research in Leadership Laboratory: Change Theory, Innovation, and Application**
(3-0) 3 hours credit. Prerequisite: EDU 7133 or consent of instructor.
Inquiry into the research of leadership and organizational change processes in field-based settings. Examination of cases involving organizational and leadership change agents.
- 7663 Technology in Educational Environments**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Examination of current models for use and application of technology, including computer-based, multimedia, and distance learning in educational settings.
- 7773 Independent Study**
3 hours credit. Prerequisites: Doctoral standing and permission in writing (form available) of the instructor and student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work as part of the regular course offerings. May be repeated for credit, but no more than 6 hours will apply to the doctoral degree.
- 7783 Special Problems**
3 hours credit. Prerequisites: Doctoral standing and consent of instructor.
An organized course offering the opportunity for specialized study not normally or often part of the regular course offerings. Special Problems courses may be repeated for credit when topics vary, but no more than 6 hours will apply to the doctoral degree.
- 7893 Doctoral Research**
3 hours credit. Prerequisite: Admission to candidacy for the doctoral degree. May be repeated for credit, but no more than 6 hours may be applied to the doctoral degree.

COURSE DESCRIPTIONS–DOCTORAL LEVEL INSTRUCTIONAL LEADERSHIP (ILR)

- 7103 Ways of Knowing**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Advanced study of the diversity of thought and thinking and implications for understanding learning processes and leadership.
- 7113 Paradigms in Instructional Leadership**
(3-0) 3 hours credit. Prerequisite: LDR 7133.
Pluralistic alternatives and advanced approaches in instructional leadership, including research related to models of instruction and student achievement, frameworks for identifying and analyzing models of teaching, and decision making.

- 7123 Cases in Instructional Development and Reform**
(3-0) 3 hours credit. Prerequisite: LDR 7183.
Examines historical developments in instruction and schooling and the results. Focuses on social, achievement, and cultural criteria for evaluating curricular effects and factors in positive curriculum developments.
- 7513 Advanced Seminar in Critical Issues in Instructional Leadership**
(3-0) 3 hours credit. Prerequisite: ILR 7113 or consent of instructor.
Study of critical issues in instructional leadership. Investigation of research, practices, and positions related to curriculum and instruction and leadership.
- 7643 Advanced Research on Instruction**
(3-0) 3 hours credit. Prerequisite: ILR 7123 or consent of instructor.
Design and development of advanced research studies on classroom instruction. Participants conduct directed research into critical issues of classroom practice.
- 7773 Independent Study**
3 hours credit. Prerequisites: Doctoral standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work as part of the regular course offerings. May be repeated for credit, but no more than 6 hours will apply to the doctoral degree.
- 7783 Special Problems**
3 hours credit. Prerequisites: Doctoral standing and consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often part of the regular course offerings. Special Problems courses may be repeated for credit when topics vary, but no more than 6 hours will apply to the doctoral degree.
- 7893 Doctoral Research**
3 hours credit. Prerequisite: Admission to candidacy for the doctoral degree.
May be repeated for credit, but no more than 6 hours may be applied to the doctoral degree.

COURSE DESCRIPTIONS—DOCTORAL LEVEL LEADERSHIP (LDR)

- 7133 Majority-Minority Settings: Creating a Community of Leaders**
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
This course focuses on organizational relationships and the tension between power and equality. A model of leadership in which organizational members are given shared visions to accomplish goals is presented.

- 7153 Reflective Leadership: The Personal Dimension**
(3-0) 3 hours credit. Prerequisite: LDR 7133.
An in-depth study of the character and nature of leadership, including an examination of social ethics, educational policy issues, and the link of theory and practice. Students are required to clarify, critique, and develop personal perspectives on the public responsibility of leaders.
- 7183 Emerging Paradigms in Leadership**
(3-0) 3 hours credit. Prerequisites: LDR 7133 and LDR 7153.
An overview of major leadership theories and an exploration of significant shifts in perspectives that affect the exercise of authority and power. A reexamination of traditional views of leadership and an analysis of views emerging from corporate, international, and transcultural perspectives.
- 7343 Legal and Ethical Considerations for Educational Leaders**
(3-0) 3 hours credit. Prerequisites: LDR 7133, LDR 7153, and LDR 7183.
Analysis of complex policy cases that raise ethical or legal issues. Using current legal mandates in the context of democratic values, students test and interpret leadership policy that arises from these cases.
- 7413 Sponsored Internship in Educational Leadership**
(1-16) 3 hours credit. Prerequisites: LDR 7133, LDR 7153, LDR 7183, LDR 7343, and assessment and screening process administered by UTSA and cooperating sponsors (application available).
Individually designed internships in educational leadership in school systems, adult and higher education, human service institutions, government, and private industry. Jointly supervised by University faculty and field administrators from cooperating agencies. 3 hours of credit for each of two consecutive semesters. Successful completion of both semesters is required before credit is awarded.
- 7993 Dissertation**
3-9 hours credit. Prerequisites: Admission to candidacy for the doctoral degree and consent of student's graduate advisor of record.
Credit will be awarded upon completion of the dissertation.

DIVISION OF SOCIAL AND POLICY SCIENCES

Master of Public Administration Degree

The Master of Public Administration (M.P.A.) is a professional degree designed to prepare individuals for positions in management and policy at several levels of government, in nonprofit agencies, and in the private sector where knowledge of government is important.

Program Admission Requirements. Applicants must satisfy University-wide graduate admission requirements, submit either Graduate Record Examination (GRE) or Graduate Management Admission Test (GMAT) scores, submit a letter of intent, and complete undergraduate courses in research methods or statistics, economics, and U.S. government (politics). The letter of intent should state the applicant's reasons for pursuing the M.P.A. and how the degree will help the applicant achieve her or his career goals. Three letters of recommendation are optional. Applicants may be admitted as unconditional, conditional, or special students. Admission as a special graduate student does not guarantee subsequent admission as a degree-seeking student; such students must reapply for degree-seeking status.

Degree Requirements. The minimum number of semester credit hours required for the degree, exclusive of coursework or other study required to remove deficiencies, is 36. In addition to these basic degree requirements, students without previous public service employment must complete an additional 6 semester credit hours. Students have the option of taking 3 or 6 hours of PAD 6936,6 Internship or PAD 6983,6 Master's Thesis, or they can take PAD 6923 Applied Research twice or a combination of courses that meet the 6-hour requirement.

Degree candidates must complete

A. 21 semester credit hours of core courses:

PAD	5003	Introduction to Public Administration
PAD	5023	Quantitative Methods for Public Administration
PAD	5033	Theories of Public Bureaucracy
PAD	5323	Public Policy Formation and Implementation
PAD	5343	Personnel Management in the Public Sector
PAD	5363	Public Sector Financial Management
PAD	5393	Economics for Public Administrators

Normally, students enroll in PAD 5003 and 5023 during their initial semester

B. 9 semester credit hours in one of the following general tracks, chosen in consultation with the M.P.A. faculty advisor and approved by the Graduate Studies Committee Chair:

Public Management and Administration
Public Policy

C. 6 semester credit hours of electives

- D. Comprehensive examination. Degree candidates are required to pass both written and oral comprehensive examinations. The exams are administered in the form of the student's preparation and public presentation of a professional-quality exit paper. Examinations are given in the Fall and Spring Semesters and are scheduled after a student has completed at least 30 semester credit hours in the program, including core requirements.
- E. Thesis option. Students may also elect to complete a thesis as part of their M.P.A. degree program. Arrangements for this option are made through the Graduate Advisor of Record.

COURSE DESCRIPTIONS PUBLIC ADMINISTRATION (PAD)

5003 Introduction to Public Administration

(3-0) 3 hours credit.

Provides an overview of the theoretical foundations, substance, and boundaries of modern public administration. Examines the traditional management functions in the legal domain performed by public administrators as well as current issues and problems in the field.

5013 Communication Skills for Public Management

(3-0) 3 hours credit.

Designed to improve a student's ability to use oral, written, graphic, or other presentation techniques as a means of expressing and conceptualizing ideas. Focuses on written and oral communications skills in public administration. Topics may include instruction in grant writing and the development and management of conferences, seminars, and workshops. (Formerly PAD 6513. Credit cannot be earned for both PAD 5013 and PAD 6513.)

5023 Quantitative Methods for Public Administration

(3-0) 3 hours credit. Prerequisite: Undergraduate statistics or methodology course.

Quantitative aspects of analysis and decision making, emphasizing research design and use of inferential and descriptive statistics with computer applications. Univariate analysis through multivariate analysis is covered. (Formerly PAD 5903. Credit cannot be earned for both PAD 5903 and PAD 5023.)

5033 Theories of Public Bureaucracy

(3-0) 3 hours credit.

This course allows students to examine major theories of organization and assess these theories' fit with and impact on public sector bureaucracy. Emphasis is on organizational dynamics, behavior in bureaucracies, sources of organizational change, and the integration of theory and practice. (Formerly PAD 5353. Credit cannot be earned for both POL 5353 and PAD 5033.)

- 5223 Urban Management**
(3-0) 3 hours credit.
An examination of the major economic, social, and political processes involved in managing urban government in the United States. Topics may include contemporary issues in urban areas, urban finance, and intergovernmental dimensions of urban management.
- 5233 Scope and Methods of Analytical Inquiry**
(3-0) 3 hours credit.
An exploration into the nature, breadth, and modes of analytical inquiry relevant to social, natural, managerial, policy, or other applied sciences. Attention focuses initially on the conduct of analysis, scientific investigation, and systematic inquiry.
- 5243 Management Information Systems**
(3-0) 3 hours credit.
This course explores managerial means of accessing, organizing, and using information and data in public organizations. Attention is given to use of Internet, internal database, and information systems management.
- 5303 Ethics in Government Administration**
(3-0) 3 hours credit.
An inquiry into the philosophical and legal foundations of government administration, and the propriety, application, and enforcement of ethical standards for conducting government. Topics may include the dilemmas associated with public administration in democracies, multicultural environments, and societies marked by socioeconomic and ideological stratification.
- 5313 Public Policy Analysis**
(3-0) 3 hours credit. Prerequisite: PAD 5323.
This course surveys theories, frameworks, approaches, and analytical tools in order to provide students with the basis for further study in policy analysis. Special attention is given to the role of policy analysis in forming the process of change and reform.
- 5323 Public Policy Formation and Implementation**
(3-0) 3 hours credit.
Examines the public policy agenda-setting process. The dynamics of policy implementation, including reasons for success or failure, are addressed.
- 5333 Program Evaluation**
(3-0) 3 hours credit. Prerequisite: PAD 5023 or consent of instructor.
The process, politics, and methodology of analyzing and evaluating public programs. Addresses uses and limitations of methods such as cost-benefit analysis, time-series analysis, and case studies. Students are required to produce a report evaluating a program.

5343 Personnel Management in the Public Sector

(3-0) 3 hours credit.

An examination of the theory and practice of human resource management in public organizations, including the economic, political, and social factors shaping human resource policies in the public sector. Provides an overview of current procedures and practices in the basic personnel functions with particular attention to alternatives for improvement. (Formerly POL 5343. Credit cannot be earned for both POL 5343 and PAD 5343.)

5353 Policy Issues in Public Services and Employment

(3-0) 3 hours credit.

Examines current issues in the public service such as productivity improvement, workforce development, total quality management, and labor/management relations. May be repeated when topics vary.

5363 Public Sector Financial Management

(3-0) 3 hours credit.

Addresses policies, procedure, and skills relevant to financial management in public sector organizations. Emphasis is on the practice of budgeting, accounting, revenue generation, capital budgeting, and debt management.

5393 Economics for Public Administrators

(3-0) 3 hours credit.

Addresses microeconomic theories and concepts and how they can be used in the analysis of public policy. Policy issues that may be addressed include taxation, education, housing, and pollution.

5423 Employment and Training Programs

(3-0) 3 hours credit.

An analysis of public policies and programs relating to the development, sustainment, and utilization of the workforce in the areas of labor economics, education and training, and income maintenance.

5443 Diversity Policies and Management

(3-0) 3 hours credit.

Examines current policies and management practices associated with cultural, ethnic, and gender differences in the workplace. Includes analysis of the theoretical and historical bases for affirmative action policies, the impact of such policies, and their interaction with civil service systems and collective bargaining structures. (Formerly PAD 5433. Credit cannot be earned for both PAD 5433 and PAD 5443.)

5503 Introduction to Urban Planning

(3-0) 3 hours credit.

The course explores the development and evolution of city planning. An introduction to the major concepts and procedures used by planners, with emphasis on developing the urban general plan.

5513 Urban and Regional Economic Development

(3-0) 3 hours credit.

Scope and status of urban-regional economic development. Analyses of factors contributing to the economic growth or decline of U.S. cities or regions. Roles of government in urban and regional economic development and public/private cooperation. Case studies of specific urban areas.

5563 Urban Planning Methods

(3-0) 3 hours credit. Prerequisite: PAD 5503 or consent of instructor.

This course focuses on the analytical tools and research methods available to the city planner in addressing social, economic, and environmental problems. Urban data collection, analysis, and demographics are addressed.

5623 Comparative Public Administration

(3-0) 3 hours credit.

Analysis of a variety of contemporary administrative systems in Western, Communist, and developing nations. Special attention to historical development, organization, functioning, and recruitment in selected bureaucracies. Examines relationships between bureaucracies and other components of the political system.

5653 Public Policy and Administration in Latin America

(3-0) 3 hours credit.

Focuses on the distinctions of public policy formation and administration in Latin American countries. Interrelationships among countries and with the United States are also addressed.

5663 Development Administration

(3-0) 3 hours credit.

Explores the basic relationship between administration and development in underdeveloped, newly developing, and developed societies. The role of development administration and supranational organizations, as well as regional and international political economic organizations, is also analyzed.

5813 Health Issues and Policies

(3-0) 3 hours credit.

This course explores selected policy areas and related contemporary topics. (May be repeated once for credit when topics vary.)

5823 Health Finance and Economics

(3-0) 3 hours credit.

The course considers issues of the finance of public health programs in the context of public demands and limited resources. Financial interaction between federal, state, and local governments and the private health care delivery system are also explored.

5833 The Aging Population and Health Administration

(3-0) 3 hours credit.

The course explores the policies and administrative responses addressing the public health needs and related living arrangements resulting from an increasingly aging population.

- 5843 Epidemiological Demands and Health Administration**
(3-0) 3 hours credit.
Analyzes the administrative responses needed to address immediate and long-term issues of the factors involved in large-scale disease prevalence.
- 5863 International Health Issues**
(3-0) 3 hours credit.
This course investigates salient health issues in countries other than the United States. Focus is on the health problems of developing countries.
- 5873 Health Administration**
(3-0) 3 hours credit.
An examination of the role of the public health administrator and the methods of public health administration within the context of public health policy.
- 5913 Nonprofit Organizations**
(3-0) 3 hours credit.
The focus of this course is on the role and characteristics of nonprofit organizations. Topics may include advocacy, governance, accountability, philanthropy, voluntarism, and financial resources. In different semesters, focus may be on organizations dealing with health and human services, community development, housing, education, energy, and the environment.
- 5923 Nonprofit Leadership and Management**
(3-0) 3 hours credit.
This course focuses on leadership and managerial responsibilities and techniques in nonprofit organizations. Topics may include the roles and functions of boards of directors; the communication of a vision and effectively moving toward it; coordinating committees of governmental and business leaders; organizing, coordinating, and facilitating meetings; the cultivation and use of volunteers; and the management of change and conflict.
- 5933 Fiscal Resource Development and Management in Nonprofit Organizations**
(3-0) 3 hours credit.
Designed to promote an understanding of philanthropy, fund-raising, grants, contracting, resource development planning, and financial management appropriate to nonprofit groups.
- 6213 Social Justice**
(3-0) 3 hours credit.
The provision of normative guidance for understanding social issues and tracing the consequences of public service policies and programs through various constructions of justice. Competing facts and values that surround the contemporary debate over justice policy and practice. Topics may include human agency, resistance to domination, developing alternative organizations, development of moral reasoning and values, and distributive justice.

6223 Legal Regulation of Urban Systems

(3-0) 3 hours credit.

This course focuses on how the law affects municipal management and planning. Topics may include legal research, real property law, municipal corporations, land use and land development regulation, and municipal annexation.

6233 Law and Policy

(3-0) 3 hours credit.

This course examines the relationship between law and policy in the three branches of government and at the federal, state, and local levels. It focuses on the relationships between behavior and public law and policy.

6243 Administrative Law

(3-0) 3 hours credit.

Students have the opportunity to examine administrative rules, regulations, and procedures from a legal perspective. Topics may include the delegation of authority, freedom of information, and administrative rule-making, discretion and hearings. (Credit cannot be earned for both PAD 6243 and POL 5513.)

6543 Urban Service Systems

(3-0) 3 hours credit.

Study of urban service systems such as infrastructure, public safety, housing, and transportation systems. Economy, equity, and effectiveness are addressed. Political and social dimensions may also be examined.

6923 Applied Research

(3-0) 3 hours credit.

Provides the opportunity to apply substantive expertise and research methods to managerial or policy issues in the public sector. May be repeated once for credit with a different emphasis.

6951,3 Independent Study

1 or 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the Graduate Advisor of Record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not usually available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the appropriate Graduate Studies Committee Chair to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the exam is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6963,6 Internship

3 or 6 hours credit. Prerequisite: Consent of instructor and 18 semester credit hours of graduate work.

Work-oriented experience in a local organizational setting where the principles, theories, concepts, and methods of the discipline can be applied. A research paper under the supervision of assigned faculty is required.

6973 Special Problems

(3-0) 3 hours credit.

An organized course offering the opportunity for specialized study not usually available as part of the regular course offerings. Special problems may be repeated for credit when topics vary, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6983,6 Master's Thesis

3 or 6 hours credit. Prerequisites: Permission of the Graduate Advisor of Record and thesis director and 24 semester credit hours of graduate work. Thesis research and preparation. May be repeated for credit, but no more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis.

**COURSE DESCRIPTIONS
CRIMINAL JUSTICE
(CRJ)**

5013 Crime and Justice: Theory and Policy

(3-0) 3 hours credit.

An examination of the phenomenon of crime and its impact on victims, social institutions, and the criminal justice system. Focus on the interactions between theories of crime, the processes for developing policy alternatives, and implementation of justice delivery. (Formerly CRJ 5003. Credit cannot be earned for both CRJ 5003 and CRJ 5013.)

5423 Seminar in Correctional Administration

(3-0) 3 hours credit.

A study of correctional components of the criminal justice system, including institutional and community-based components. Reviews impact of legal and social change on correctional agencies. Emphasis on planning and evaluation of innovative programs.

5543 Juvenile Justice, Schools, and Public Policy

(3-0) 3 hours credit.

An examination of the causes, extent, and nature of delinquent behavior; the role of schools; and related social institutions. Focus on juvenile law and the judicial process, school, and public policies for delinquency prevention and control; evaluative research on the relative costs and effectiveness of various interventions and programs. (Credit cannot be earned for both CRJ 5543 and CRJ 6973.)

5753 Legal Dimensions of Criminal Justice

(3-0) 3 hours credit.

A review of recent and contemporary legal issues related to the administration of criminal justice. Examines legal parameters of the criminal justice system in terms of impact on various component parts.

6953,6 Independent Study

3 or 6 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record.

Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not usually available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not usually available as part of the regular course offerings. Special Problems may be repeated for credit when topics vary, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

COURSE DESCRIPTIONS GEOGRAPHY (GRG)

5303 Economic Geography

(3-0) 3 hours credit.

Substantive and theoretical consideration of the economic implications of geography. Topics include the development of industrial patterns, subsistence patterns, transportation systems, and resource exploitation. Central place theory, Boserup's theory of agricultural growth, and other theoretical matters are considered.

5323 Seminar in Urban Geography

(3-0) 3 hours credit.

Advanced study of urban structure and urban dynamics viewed from a spatial perspective. Topics may include urbanization, housing and neighborhood space, intraurban migration, the location of economic activity in the city, and urban land-use systems. May be repeated for credit when the topics vary.

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not usually available as part of the regular course offerings. Special Problems may be repeated for credit when topics vary, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

Master of Arts Degree in Political Science

The Master of Arts degree in Political Science is a professional degree designed to provide students with skills in acquiring and analyzing data on political behavior within societies, the relationship between data and theory, the interplay between politics and economics, and the basis of divergent theoretical perspectives. If they desire, students also have the opportunity to specialize in one of three areas: political communications and behavior, political economy, and international politics. Students choosing the specialization in political communications and behavior (leading to possible careers in public opinion polling, political campaign management, political consulting, political journalism, and public relations) should become proficient in fields such as political psychology, electoral behavior, and campaign management. Students choosing the specialization in political economy (leading to possible careers in public or private sectors of domestic or international business and government) have the opportunity to acquire detailed knowledge and skills in a variety of areas, including political economy, business and labor, and budgeting and finance in the public sector. Students choosing the specialization in international politics (leading to possible fields of comparative analysis and international relations and careers in public and private sectors) may acquire the skills to compare political systems and behavior in different countries, and to analyze the way governments and international organizations interact in the global political arena.

Program Admission Requirements. To qualify for unconditional admission, applicants must satisfy University-wide graduate admission requirements, submit Graduate Record Examination (GRE) scores, have completed 18 hours in upper-division undergraduate or graduate-level courses in political science or related fields, have a 3.0 average in the last 60 hours of undergraduate and graduate work, and be accepted by the Graduate Studies Committee. There is no minimum GRE score below which applicants will be automatically disqualified. Applicants who do not meet the above requirements for unconditional admission will be considered for admission under the condition that they take specific courses and achieve specific grades. Students may also be admitted as special graduate students. Admission as a special graduate student does not guarantee subsequent admission as a degree-seeking graduate student. These students must reapply for degree-seeking status.

Degree Requirements. The minimum number of semester credit hours required for the degree, exclusive of coursework or other study required to remove deficiencies and courses in foreign languages, is 36. Admission to the program may require students without a basic foundation in statistics and/or social science research methods to complete an undergraduate-level course in one of those areas before enrolling in POL 5013 Research Methods. Students selecting the political economy and the international politics specializations are required to demonstrate reading proficiency in a foreign language through a written examination.

Degree candidates must complete

A. 12 semester credit hours of core courses

POL	5003	Political Inquiry
POL	5013	Research Methods

Plus 6 semester hours from the following:

POL	5023	Political Economy
POL	5033	Political Communications and Behavior
POL	5043	International Politics

- B. 18 semester credit hours (for the master's thesis) or 21 semester credit hours (for the master's essay) of designated elective courses in consultation with the faculty advisor. Normally, at least 6 hours are taken outside of political science.

- C. Students specializing in political communications and behavior must complete at least 9 of the prescribed 12 to 15 semester credit hours from the following:

POL	5403	Topics in Political Communications and Behavior
POL	5413	Political Psychology
POL	5423	Campaign Management and Consulting
POL	5433	Electoral Behavior
POL	5443	Polling and Survey Research Techniques
POL	6963	Internship

- D. Students specializing in political economy must complete at least 9 of the prescribed 12 to 15 hours from the following:

POL	5803	Topics in Political Economy
POL	5813	Principles of Economic Governance
POL	5823	Political Economy of the Americas
POL	5833	Business and Labor in U.S. Politics
ECO	5303	International Trade and Finance
FIN	5043	Budgeting and Finance in the Public Sector or
PAD	5363	Public Sector Financial Management
POL	6963	Internship

- E. Students specializing in international politics must complete at least 9 hours of the prescribed 12 to 15 hours from the following:

POL	5303	Topics in Comparative and International Politics
POL	5703	American Foreign Policy
POL	5713	Comparative Political Systems
POL	5723	International Organizations
POL	5733	Political Actors and Systems in Latin America
POL	5743	Elections in the Americas
PAD	5653	Public Policy and Public Administration in Latin America
PAD	5663	Development Administration

- F. Comprehensive examination. Degree candidates are required to pass a written comprehensive examination before enrolling in POL 6983 Master's Thesis or POL 6993 Master's Essay.

- F. Thesis option. Based on their career goals, students must submit either a written master's thesis (6 semester credit hours) or a master's essay (3 semester credit hours).

COURSE DESCRIPTIONS POLITICAL SCIENCE (POL)

5003 Political Inquiry

(3-0) 3 hours credit.

A critical survey of political science as an academic and an applied discipline. Topics may include links to and differences from the other social sciences; the relationship of theory, facts, and values; policy analysis and prescription; ethics and politics; approaches to research; and teaching politics.

5013 Research Methods

(3-0) 3 hours credit.

Methods of inquiry in political science. Topics may include major theoretical and research traditions, quantitative and qualitative approaches, problems of conceptualization and operationalization, research design, data collection techniques, probability and sampling, descriptive and inferential statistics, and use of standard computer packages.

5023 Political Economy

(3-0) 3 hours credit.

Analysis of the interplay of politics and economics in the domestic and international arenas. Divergent theoretical perspectives and their basis in the work of classical and contemporary political economists and social theorists. Topics may include the politics and economics of international trade, technology policy, educational reform, industrial restructuring, privatization, environmental policy, and labor-market policy.

5033 Political Communications and Behavior

(3-0) 3 hours credit.

An examination of major theories and research dealing with human behavior and interaction in politics, drawing on the literature of political sociology, political communications, political anthropology, and political psychology. Professional applications such as public opinion polling, political journalism, public relations, campaign management, political advertising, and political consulting are considered.

5043 International Politics

(3-0) 3 hours credit.

An examination of the core theories that address international politics. The course studies comparative theories as well as those that analyze power and security issues in the international arena.

- 5103 Topics in American Politics**
(3-0) 3 hours credit.
An examination of an individual topic or set of issues in American politics. May be repeated for credit when topics vary.
- 5123 Ethnic Politics**
(3-0) 3 hours credit.
How ethnic differences influence political behavior, policy-making, and policy outcomes in the United States. Theories of ethnic relations. Strategies for dealing with ethnic conflict and discrimination.
- 5133 Gender Politics**
(3-0) 3 hours credit.
How gender differences influence political behavior, policy-making, and policy outcomes in the United States. Feminist and other theories of gender relations. Strategies for dealing with gender discrimination and harassment.
- 5153 American Government and Politics**
(3-0) 3 hours credit.
An examination of the major issues, problems, and processes of American government and administration.
- 5203 Topics in Political Theory**
(3-0) 3 hours credit.
An examination of an individual topic, theorist, or set of issues in political theory. May be repeated for credit when topics vary.
- 5213 Advanced Research Methods**
(3-0) 3 hours credit.
An in-depth examination of regression analysis. Advanced topics may include recursive and nonrecursive causal modeling, factor analysis, and structural equation modeling.
- 5303 Topics in Comparative and International Politics**
(3-0) 3 hours credit.
An examination of an individual topic or set of issues in comparative and/or international politics. May be repeated for credit when topics vary.
- 5403 Topics in Political Communications and Behavior**
(3-0) 3 hours credit.
An examination of an individual topic or set of issues in political communications and behavior. May be repeated for credit when topics vary.
- 5413 Political Psychology**
(3-0) 3 hours credit.
The application of psychological theories to the explanation and prediction of political phenomena at individual, small group, organizational, and nation-state levels. Topics may include political socialization, personality and political leadership, the social psychology of mass participation, rational choice and symbolic politics paradigms of political behavior, psychological models of international conflict, and models of political cognition.

5423 Campaign Management and Consulting

(3-0) 3 hours credit.

An examination of strategies and techniques employed in managing electoral and lobbying campaigns. Topics may include development of comprehensive campaign plans, techniques of fund-raising and budgeting, advertising and public relations, canvassing phone banks, sociodemographic targeting, use of polls, image management, and use of mass media.

5433 Electoral Behavior

(3-0) 3 hours credit.

An examination of political science theory and research on elections and voting behavior in the United States and other countries. Topics may include electoral cycles and realignment patterns; the impact of media coverage and campaign tactics on opinions, turnout, and electoral outcomes; and the sociodemographic and psychological variables influencing voting and nonvoting.

5443 Polling and Survey Research Techniques

(3-0) 3 credit hours.

The sources, dynamics, and political effects of public opinion. Emphasis is on applied quantitative and qualitative techniques of data collection and analysis commonly used by political scientists, polling organizations, and political consultants in measuring citizen orientations. Topics may include survey methods, interviewing, focus groups, debate meters, sociodemographic targeting, content analysis, frame analysis, simulation, multidimensional scaling, and cluster analysis.

5503 Constitutional Law and Judicial Decision-Making

(3-0) 3 hours credit.

An advanced course in constitutional law and interpretation. Emphasis is on written judicial decisions, the political environment of judicial decision-making, and the impact of constitutional policy on society.

5623 Intergovernmental Relations in the United States

(3-0) 3 hours credit.

The administrative and political effects of the division of authority among coordinate units of government. Federal-state, state-local, local-federal, state-state, local-local, and governmental-nongovernmental relations are examined.

5703 American Foreign Policy

(3-0) 3 hours credit.

An intensive analysis of the policy formulation process and the substance of selected contemporary problems in foreign policy. Political and institutional factors affecting foreign policies are stressed, along with the analysis of policy options.

5713 Comparative Political Systems

(3-0) 3 hours credit.

Comparative analysis of institutions, processes, and policy objectives in Western, Communist, and developing political systems.

5723 International Organizations

(3-0) 3 hours credit.

An examination of international political and economic organizations, as well as major issues involving them. Topics may include alliance systems, regional development, common markets, peacekeeping, international conferences, United Nations, IMF, World Bank, and regional organizations.

5733 Political Actors and Systems in Latin America

(3-0) 3 hours credit.

An examination of politics in Latin America. The course centers the analysis around two axes: the interplay between civil society and the state and patterns of inter-American relations.

5743 Electoral Systems in the Americas

(3-0) 3 hours credit.

A comparative study of campaigns and elections in the Americas. The course assesses similarities and differences of electoral systems in the region with particular emphasis on North American politics (Canada, the United States, and Mexico).

5803 Topics in Political Economy

(3-0) 3 hours credit.

An examination of an individual topic or set of issues in political economy. May be repeated for credit when topics vary.

5813 Principles of Economic Governance

(3-0) 3 hours credit.

Examination of the changing principles and practices of economic governance in Western democracies. The shift to market-oriented governance techniques. Theories of state-business relations. Case studies of specific national and regional governance regimes. Topics may include fiscal and monetary policy, the management of welfare systems, industrial development and antitrust, communications policy, trade policy, natural resource management, and regional development.

5823 Political Economy of the Americas

(3-0) 3 hours credit.

An examination of the changing relationship among the state, society, and the private sector in Latin America and its influence on hemispheric relations. Topics may include state ownership and privatization, industrial policy, trade union influence, foreign investment and foreign trade policy, and the impact of NAFTA, GATT, and other international agreements.

5833 Business and Labor in U.S. Politics

(3-0) 3 hours credit.

An examination of the influence of business and labor organizations on public policy formation, implementation, and elections. Theories and case studies of business and labor influence. Interest group organization, strategies, and tactics. Policy areas may include industrial relations and labor law, regulatory practices, foreign trade, the environment, government subsidization, taxation, and finance.

6951,3 Independent Study

1 or 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record.

Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not usually available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the appropriate Graduate Studies Committee to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6963,6 Internship

3 or 6 hours credit.

Practical experience in a work place setting in which classroom knowledge of political institutions and processes and public policy can be deepened and applied. May be repeated for credit to a maximum of 6 hours.

6973 Special Problems

(3-0) 3 hours credit. Prerequisite: Consent of instructor.

An organized course offering the opportunity for specialized study not usually available as part of the regular course offerings. Special Problems may be repeated for credit when topics vary, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6983 Master's Thesis

6 hours credit. Prerequisites: Permission of the Graduate Advisor of Record and thesis director.

Thesis research and preparation. May be repeated for credit, but no more than 6 hours will apply to the master's degree. Credit will be awarded on completion of the thesis. Enrollment is required each term in which the thesis is in progress.

6993 Master’s Essay

3 hours credit. Prerequisites: Permission of the Graduate Advisor of Record and master’s essay director.

Master’s essay research and preparation. May not be repeated for credit. Credit will be awarded on completion of the essay. Enrollment is required in the first term in which the essay is in progress.

Master of Science Degree in Sociology

The Master of Science degree in Sociology is designed to prepare graduates with the skills necessary to enter the professional workforce as sociologists or to pursue further study at the doctoral level. Students have the opportunity to acquire a knowledge base in sociological methods and in areas of growing community concern, such as health, aging, civil-military relations, socioeconomic development, gender issues, and race and ethnic relations. They will have the necessary research skills to define social issues and problems, select data collection techniques, establish appropriate analysis methods, develop statistical reports, and undertake policy analyses for business, industries, and governmental organizations.

Program Admission Requirements. To qualify for unconditional admission, applicants must satisfy University-wide graduate admission requirements, submit Graduate Record Examination (GRE) scores, and be recommended for admission by the Graduate Studies Committee. Applicants must have completed 18 semester hours of undergraduate courses, 12 of which must be at the upper-division level, in sociology or related areas, including a course in theory and a course in research methods or statistics. There is no minimum GRE score for which applicants will be automatically disqualified. Applicants who do not meet these requirements will be considered for conditional admission if they meet the following criteria: conditional applicants must submit the Graduate Record Examination (GRE) Sociology Test or other indicators of preparation for graduate study, such as completion of additional undergraduate coursework to remove deficiencies, completion of 9 or more semester credit hours of graduate courses, and the achievement of a 3.0 grade-point average. An applicant not eligible for either unconditional or conditional admission may be recommended for admission as a special graduate student. This does not guarantee subsequent admission as a degree-seeking graduate student; such students must reapply for degree-seeking status.

Degree Requirements. The minimum number of semester credit hours required for the degree, exclusive of coursework or other study required to remove deficiencies, is 36.

Degree candidates must complete

A. 12 semester credit hours of core courses:

SOC	5003	Sociological Theory
SOC	5013	Advanced Conceptualization and Measurement
SOC	5023	Quantitative Research Methods
		or
SOC	5033	Qualitative Research Methods
SOC	5043	Evaluation Research

B. 12 semester credit hours of prescribed electives:

SOC	5103	Complex Organizations
SOC	5113	Civil Military Relations
SOC	5123	Family Contexts and Social Change
SOC	5133	Sociology of Health and Health Care
SOC	5143	Demography and Community Trends
SOC	5153	Sociology of Tourism and Leisure
SOC	5203	Social Stratification
SOC	5213	Race and Ethnic Relations
SOC	5223	Mexican Americans
SOC	5233	Gender and Society
SOC	5243	Aging and Society
SOC	6903	Topics in Advanced Sociology
SOC	6953	Independent Study
SOC	6961	Comprehensive Examination

C. 6 semester credit hours of electives taken outside of sociology

D. 6 semester credit hours of Internship or Thesis

Internship option. Students may participate in an internship (the nonthesis option) after completion of 18 semester credit hours. Internships offer work-oriented experiences in local organizational settings where the principles, theories, concepts, and methods of the discipline can be applied. A research paper under the supervision of assigned faculty is required.

Thesis option. Students may select the thesis option after they have completed 24 semester credit hours.

E. Comprehensive examination. Degree candidates are required to pass both written and oral comprehensive examinations. Examinations are scheduled after a student has completed at least 30 semester credit hours in the program.

COURSE DESCRIPTIONS SOCIOLOGY (SOC)

5003 Sociological Theory

(3-0) 3 hours credit.

The nature of sociological theory, the major varieties of theory, the theorists who developed them, and the social and historical contexts of theory development and construction. Issues concerning the relation of theory and research are also explored.

5013 Advanced Conceptualization and Measurement

(3-0) 3 hours credit. Prerequisite: 3 semester hours of undergraduate research methods.

Advanced quantitative research methods. Topics may include index construction and scaling, analysis of variance, multiple correlation, and regression, with use of applicable computer programs to analyze local, state, and/or national data sets.

5023 Quantitative Research Methods

(3-0) 3 hours credit. Prerequisite: SOC 5013.

Analyses is pursued using a variety of multivariate statistical techniques developed to meet specialized research problems. Topics may include log-linear analysis, factor analysis, path analysis, discriminant function analysis, logistic regression, and/or LISREL.

5033 Qualitative Research Methods

(3-0) 3 hours credit. Prerequisite: SOC 5013.

Qualitative strategies and techniques used in social science research, including field methods such as participant observation, in-depth interviews, and the collection of documents. Emphasis is on understanding the ways people interpret their experiences and construct and share their reality.

5043 Evaluation Research

(3-0) 3 hours credit. Prerequisite: SOC 5013.

Theory and practice of evaluation of public policy and social service programs. Evaluation theories, models, and key evaluation studies are reviewed. Practical and political issues involved in the design and implementation of evaluations are addressed. Evaluation of a social agency or program may be included.

5103 Complex Organizations

(3-0) 3 hours credit. Prerequisites: SOC 5003 and SOC 5013.

Structure and dynamics of large organizations, with emphasis on outcomes related to varying organizational contexts. The influence of culture and society on organizational behavior is also examined.

5113 Civil Military Relations

(3-0) 3 hours credit. Prerequisite: SOC 5013.

Theories of military organization and the impact of the military on societies and communities. Topics may include race and gender relations, military unions, coup d'etats, war, and technology.

5123 Family Contexts and Social Change

(3-0) 3 hours credit.

Family system organization and process within the broader context of community and society. Emphasis is on the changing historical roles of families, as well as cross-cultural, socioeconomic, race and ethnic, and gender variability in the family. The impact of education, the economy, and politics is also considered.

5133 Sociology of Health and Health Care

(3-0) 3 hours credit. Prerequisite: SOC 5013.

The relation of social behavior to health status, epidemiology, and the social organization of medicine within the United States. Emphasis is on the development of the health care industry and problems associated with the delivery of health care services.

5143 Demography and Community Trends

(3-0) 3 hours credit. Prerequisite: SOC 5013.

Basic demographic perspectives and data; methods of analysis of population size, distribution, and composition; determinants and consequences of population trends. Applications of computer programs for demographic analysis may be included.

5153 Sociology of Tourism and Leisure

(3-0) 3 hours credit. Prerequisite: SOC 5013.

Interdisciplinary survey of current theories and research on leisure activity. Leisure trends and their effects on tourism and economic development are examined.

5203 Social Stratification

(3-0) 3 hours credit.

Theory and research pertaining to structures of social inequality—their causes, forms, and consequences. Emphasis is on the distribution of power, prestige, and economic privilege, and patterns of social mobility in the United States.

5213 Race and Ethnic Relations

(3-0) 3 hours credit.

Dominant-subordinate relations between various racial and ethnic groups, from cross-cultural theoretical perspectives. Models of assimilation, cultural pluralism, and colonialism are investigated, as are their implications for minority and majority group members.

5223 Mexican Americans: Community, Culture, and Class

(3-0) 3 hours credit.

Sociological focus on the Mexican American population. Emphasis is on the theories used to interpret the experiences of this group, particularly those oriented to issues of stratification and social mobility.

5233 Gender and Society

(3-0) 3 hours credit. Prerequisites: SOC 5003 and SOC 5013.

Interdisciplinary survey of theory and current research on gender and gender-related issues. Gender-based theories are examined and compared to explanations for other forms of social stratification. Implications for family dynamics, the labor force, and the economy are explored.

5243 Aging and Society

(3-0) 3 hours credit. Prerequisite: SOC 5013.

Theory and research on the structure and dynamics of age stratification. Historical and cross-cultural differences in the status of the elderly are emphasized, as are the policy implications of demographic shifts toward an aging population.

6903 Topics in Advanced Sociology

(3-0) 3 hours credit. Prerequisites: SOC 5003 and SOC 5013.

A seminar offering the opportunity for specialized study not usually available as part of the regular course offerings. Topics may include social gerontology, deviance, demography of aging, social psychology, religion, culture and society, mass communications, and research applications. May be repeated for credit when topics vary.

6951-3 Independent Study

1 to 3 hours credit. Prerequisites: Graduate standing and permission in writing (form available) of the instructor and the student's graduate advisor of record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not usually available as part of the regular course offerings. May be repeated for credit, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6961 Comprehensive Examination

1 hour credit. Prerequisite: Approval of the appropriate Graduate Studies Committee to take the Comprehensive Examination.

Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Studies Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either CR (satisfactory performance on the Comprehensive Examination) or NC (unsatisfactory performance on the Comprehensive Examination).

6963,6 Internship

3 or 6 hours credit. Prerequisite: Consent of instructor and 18 semester credit hours of graduate work.

Work-oriented experience within a local organizational setting where the principles, theories, concepts, and methods of the discipline can be applied. A research paper under the supervision of assigned faculty is required.

6973 Special Problems

(3-0) 3 hours credit. Consent of instructor.

An organized course offering the opportunity for specialized study not usually available as part of the regular course offerings. Special Problems may be repeated for credit when topics vary, but no more than 6 hours, regardless of discipline, will apply to the master's degree.

6983,6 Master's Thesis

3 or 6 hours credit. Prerequisite: Permission of the Graduate Advisor of Record and thesis director, and 24 semester credit hours of graduate work. Thesis research and preparation. May be repeated for credit, but no more than 6 hours will apply to the master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress.

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