Equal Educational Opportunity Statement

The university is committed to a policy of nondiscrimination, on the basis of sex, race, color, religion, age, sexual orientation, national origin, disability, or veteran status in its provision of services, activities, and programs, and in its treatment of students. Students seeking further information about this policy, or related complaint procedures for alleged discrimination or sexual harassment should contact the Dean of Students.
Correspondence Directory

The University of Texas at Dallas
2008-2010 Undergraduate Catalog
Volume 32, Number 1
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This Undergraduate Catalog is published by The University of Texas at Dallas.

Address all correspondence to:
The University of Texas at Dallas
P.O. Box 830688
Richardson, TX 75083-0688

The physical address of the university is:
800 West Campbell Road
Richardson, TX 75080

The main entrance to U.T. Dallas is located on University Parkway, which runs north from Campbell Road between Floyd Road and Waterview Parkway in Richardson.

Additional programs are located at the U.T. Dallas Callier Center for Communication Disorders, 1966 Inwood Drive, Dallas, TX 75235.

Telephone: (972) 883-2111
Fax: (972) 883-6803
Admissions Information: (972) 883-2270 or 1-800-889-2443
World Wide Web: http://www.utdallas.edu/

Undergraduate Catalogs may be purchased from the University Bookstore, or may be requested by mail: The University of Texas at Dallas Bookstore, P.O. Box 830688, Richardson, TX 75083-0688.
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Undergraduate Programs Available

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Art and Performance (B.A.)*
Arts and Humanities (B.A.)*
Arts and Technology (B.A.)
Historical Studies (B.A.)*
Literary Studies (B.A.)*

School of Behavioral and Brain Sciences
Child Learning and Development (B.S.)
Cognitive Science (B.S.)*
Neuroscience (B.S.)*
Psychology (B.A.)*
Speech-Language Pathology and Audiology (B.S.)*

School of Economic, Political and Policy Sciences
Criminology (B.A.)
Economics (B.A., B.S.)*
Economics and Finance (B.S.)
Geography (B.A.)*
International Political Economy (B.A., B.S.)
Political Science (B.A.)*
Public Affairs (B.S.)*
Sociology (B.A.)*

Erik Jonsson School of Engineering and Computer Science
Computer Engineering (B.S.C.E.)
Computer Science (B.S.)*
Electrical Engineering (B.S.E.E.)*
Software Engineering (B.S.)*
Telecommunications Engineering (B.S.T.E.)*

School of General Studies
American Studies (B.A.)
Gender Studies (B.A.)
Interdisciplinary Studies (B.A., B.S.)
Teacher Certification

School of Management
Accounting and Information Management (B.S.)*
Business Administration (B.S.)*
Business Administration and Biology (B.S.)
Finance (B.S.)*
Finance and Economics (B.S.)

School of Natural Sciences and Mathematics
Biochemistry (B.S.)
Biology (B.A., B.S.)*
Biology and Business Administration (B.A., B.S.)
Biology and Criminology (B.A., B.S.)
Chemistry (B.A., B.S.)*
Geosciences (B.A., B.S.)
Mathematical Sciences (B.S.)* with majors in:
  Applied Mathematics
  Statistics
  Mathematical Sciences
Molecular Biology (B.S.)
Molecular Biology and Business Administration (B.S.)
Molecular Biology and Criminology (B.S.)
Physics (B.A., B.S.)*

Accreditation
The University of Texas at Dallas is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097; Telephone (404) 679-4500) to award baccalaureate, master’s, and doctoral degrees.

*A degree program followed by an asterisk can be used in an accelerated baccalaureate/master’s degree. Please see page 74 of the catalog for graduate programs offering Fast Track degrees.
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James R. Huffines, Vice-Chairman
Robert B. Rowling, Vice Chairman
Francie A. Frederick, General Counsel

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Colleen McHugh. .................................................................Corpus Christi
Robert B. Rowling.................................................................Dallas

Terms Scheduled to Expire February 1, 2013*
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Paul Foster. .................................................................El Paso
Printice L. Gary.................................................................Dallas

*The actual expiration date of the term depends on the date the successor is appointed, qualified, and takes the oath of office.
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Vice President for Student Affairs
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Vice President of Enrollment Management
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Vice President for Research and Economic Development
Bruce Gnade, Ph.D.

Vice President for Public Affairs
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About the Catalog

This catalog is a general information publication only. It is not intended to nor does it contain all regulations that relate to students. The provisions of this catalog do not constitute a contract, express or implied, between any applicant, student, or faculty member and The University of Texas at Dallas or The University of Texas System. The University of Texas at Dallas reserves the right to withdraw courses at any time, to change fees or tuition, calendar, curriculum, degree requirements, graduation procedures, and any other requirements affecting students. Changes will become effective whenever the proper authorities so determine and will apply to both prospective students and those already enrolled.

The online version of The University of Texas at Dallas Undergraduate Catalog is the official version and takes precedence over the printed version. The online catalog will be updated periodically and will contain all major policy changes that occur during the 2008-2010 catalog cycle.

Students are held individually responsible for complying with all requirements of the rules and regulations of the University and the Board of Regents of The University of Texas System. Failure to read and comply with policies, regulations and procedures will not exempt a student from whatever penalties the student may incur.

The catalog is arranged into sections. The sections are titled:
- Admission
- Academic Policies and Procedures
- Resources for Study and Campus Life
- Tuition and Financial Aid
- Degree Programs
- Course Descriptions
- Faculty Roster
- Appendix (Regent’s Rules of Conduct and Procedure)
- Index

Within each section the topics are arranged alphabetically.
Historical Sketch

Prior to World War II, Eugene McDermott, Cecil Green and J. Erik Jonsson, the founders of Geophysical Services, Inc., were in the business of searching for natural resources. The war changed the focus of the company from searching for natural resources to creating instruments that aided in finding enemy planes and submarines. GSI spawned Texas Instruments and in 1958, TI employee Jack Kilby invented the integrated circuit that launched a new era for the company, for North Texas and for the world.

During the expansion of Texas Instruments, the Founders were forced to import engineering talent from outside the state, while the region’s bright young adults pursued education elsewhere. McDermott, Green and Jonsson saw that Texas needed highly educated minds if the state were to remain competitive in the decades to come. They noted that in 1959 alone, Columbia University conferred 560 doctoral degrees - more than the entire Southwest region. They wrote at the time, “To grow industrially, the region must grow academically; it must provide the intellectual atmosphere, which will allow it to compete in the new industries dependent on highly trained and creative minds.”

Therefore, they established the Graduate Research Center of the Southwest (later renamed the Southwest Center for Advanced Studies) in 1961. The center recruited some of the best scientific talent in the nation. The Texas Legislature concurred with the vision of the Founders and mandated in 1967 that science and technology educational opportunities needed to exist in North Texas. McDermott, Green and Jonsson decided to donate SCAS and its lands to The University of Texas System, and on June 13, 1969, Governor Preston Smith signed the bill creating The University of Texas at Dallas. The SCAS scientists formed the core of UT Dallas’ educational infrastructure.

By terms of its enabling legislation, UT Dallas offered only graduate degrees until 1975 when the addition of juniors and seniors increased enrollment from 408 in 1974 to more than 3,300 students. By the fall of 1977, the enrollment reached over 5,300. In 1986, UT Dallas established the Erik Jonsson School of Engineering and Computer Science. Today the Jonsson School plays a critical role in providing a highly educated work force for the advanced technology industry.

The Rise to National Prominence

In 1990, the Texas Legislature authorized UT Dallas to admit lower division students. UT Dallas’ first freshman class consisted of only 100 students. Despite its small size, this cohort’s achievements set the standard for future classes. Since then, freshman classes have grown in size while the University has maintained high enrollment standards. Nationally published data indicate that UT Dallas’ freshman class compares extremely well with those from many prominent national universities. UT Dallas consistently has three-fourths of its entering freshmen in the top twenty-five percent of their graduating class with many coming from the state’s most competitive high schools.

The University’s ability to attract and retain these students has propelled The University of Texas at Dallas into national prominence within a few short years. US News and World Report ranks UT Dallas as one of the three best public universities in the state along with UT Austin and Texas A&M. Kiplinger’s Personal Finance Magazine, in its October 2006 article “100 Best Values in Public Colleges”, ranked UT Dallas 66th among all public universities nationally. The quality of the students who attend UT Dallas has remained consistently high. Over forty percent of the incoming freshmen are in the top 10% of their high school graduating class and their average SAT scores place them in the top twenty percent of all college-bound students.

The addition of freshmen has accelerated the rise in the percentage of full-time undergraduates from 31% in 1986 to 73% in 2007. Masters, doctoral and post-baccalaureate students currently comprise 36% of the student body. Given its location and mission, UT Dallas will continue to have significant numbers of professionals attending undergraduate or master’s courses part time.

The transition of the University from a part-time upper division school to a four-year university with an emphasis on engineering, mathematics, the sciences and the management of new technologies has been greatly facilitated by the University’s faculty. By retaining key faculty members and attracting more nationally and internationally prominent researchers and instructors, UT Dallas has enabled its faculty to provide quality instruction to an increasingly diverse student population while sustaining the University’s longstanding research tradition. In the past decade, the faculty has increased the level of external
research funds substantially. During this same period, the University expanded its teaching mission, enhanced its areas of focused excellence and became independently recognized as one of the top public universities in the nation.

Mission
UT Dallas serves the Metroplex and the State of Texas as a global leader in innovative, high quality science, engineering, and business education and research. The University is committed to

• Producing engaged graduates, prepared for life, work, and leadership in a constantly changing world
• Advancing excellent educational and research programs in the natural and social sciences, in engineering and technology, in management, and in the liberal, creative, and practical arts
• Transforming ideas into actions that directly benefit the personal, economic, social, and cultural lives of the citizens of Texas.

Organization
The University of Texas at Dallas is one of nine universities and six health institutions governed by The University of Texas System's nine regents, who are nominated by the governor, selected from different areas of the state, and appointed with the advice and consent of the Texas senate. UT Dallas consists of seven Schools, each headed by a dean: Arts and Humanities, Behavioral and Brain Sciences, Engineering and Computer Science, Economics, Political and Policy Sciences, General Studies, Management, and Natural Sciences and Mathematics. The schools, in turn, consist of teaching and research programs that provide the disciplinary foundations of the University. In addition to the usual disciplinary approaches, the University has a strong commitment to interdisciplinary study at both the graduate and undergraduate levels. Most faculty members teach in both graduate and undergraduate areas so that the character of their instruction is informed by critical examination of the most recent developments in their fields.

Each of the University's schools contains an undergraduate college, headed by an Associate Dean of Undergraduate Education (ADU) who coordinates the undergraduate programs and academic advising within the college. These colleges of The University of Texas at Dallas provide undergraduate students with a personalized setting in which they may pursue their academic careers. Each college offers an intellectual and social home for undergraduates within the larger university.

The Office of Undergraduate Education coordinates undergraduate education across the seven schools. The Council for Undergraduate Education (CUE), chaired by the Dean of Undergraduate Education, oversees lower-division admissions, academic advising and degree requirements, and develops and implements educational policy. The staff of the Office of Undergraduate Education manages the freshman admission review process and Academic Excellence Scholarship programs. They coordinate academic advising, operate the Learning Resource Center, administer the teaching evaluation system, monitor academic compliance for NCAA athletes, manage pre-professional training programs, and supervise the Collegium V honors program, as well as all Intellectual Competition teams. In addition, all freshman and sophomore students without declared majors are advised in the Office of Undergraduate Education.
Admission

The University of Texas at Dallas is a comprehensive, state-supported institution of higher learning, offering a variety of programs at the undergraduate, master’s, and doctoral levels. UT Dallas is committed to providing quality education to a diverse student body and offers high-quality programs designed for both full-time and part-time students. The University of Texas at Dallas accepts applications for admission from freshmen and transfer students at all levels for the fall, spring and summer semesters.

The Office of Enrollment Services, located in Hoblitzelle Hall, is the gateway to the University for prospective undergraduate students. Professional admissions counselors/advisors provide information regarding the college selection process through mailings, school visits, participation in college fairs, campus tours, the internet (http://www.utdallas.edu/enroll/) and a variety of other special events. Campus tours are provided weekdays at 10:00 a.m. and 2:00 p.m. In addition, The Office of Enrollment Services provides pre-admission counseling sessions for transfer students regarding eligibility for admission and transferability of coursework.

Admission to UT Dallas is open to all candidates on the basis of academic preparation, ability, and availability of space without regard to race, color, religion, national origin, gender, age, disability, citizenship, veteran status, or sexual orientation.

Questions related to undergraduate admissions should be addressed to: Office of Enrollment Services – HH 10; The University of Texas at Dallas; 800 W. Campbell Road; Richardson, Texas 75080-3021. Telephone (972) 883-2270. Fax (972) 883-2599. The Office of Enrollment Services is located in Hoblitzelle Hall.

As with all state institutions of higher education, the procedures and criteria for admission used by UT Dallas are effective as of the publication date of this catalog but are subject to change by actions of the Texas Legislature or the Board of Regents.

Applying for Admission

To apply to UT Dallas, all students should submit an application for admission, which is available at http://www.applytexas.org/. Applicants are required to submit copies of all past academic transcripts, test scores and other degree specific documentation by the appropriate application deadlines to be considered for admission to The University of Texas at Dallas.

Official transcripts in sealed envelopes may be delivered to the Office of Enrollment Services, or may be mailed directly from the educational institution. All materials submitted in the process of making application become the property of the University and will not be returned to the applicant.

Application Fees and Deadlines

All fees are non-refundable.

- The application fee is $50 if your application is submitted prior to the regular application deadline.
- If you submit your application after the application deadline but prior to the documentation deadline, the application fee is $125 in order to process your application for decision in time to register for classes.
- Applicants with international academic documents will be assessed an additional foreign credential evaluation fee of $50.
- All international visa holders, regardless of visa type, must adhere to the international application deadlines (see Deadlines for U.S. Citizens and Residents chart below).
- All supporting documents and transcripts, with the exception of courses in progress, must be postmarked by the documentation deadline (see Deadlines for U.S. Citizens and Residents chart below).
- A new application must be completed and submitted for consideration for any subsequent semester for all incomplete applications after the Documentation Deadline.
### Deadlines for U.S. Citizens and Residents

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<tr>
<th>Term</th>
<th>Application Deadline</th>
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<tr>
<td>Fall Full-Term and First 8-week Session</td>
<td>July 1</td>
<td>August 1</td>
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<tr>
<td>Fall Second 8-week Session</td>
<td>September 15</td>
<td>October 15</td>
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<tr>
<td>Spring Full-Term and First 8-week Session</td>
<td>November 1</td>
<td>December 1</td>
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<tr>
<td>Spring Second 8-week Session</td>
<td>January 15</td>
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<tr>
<td>Summer I (12-week Session)</td>
<td>April 1</td>
<td>May 1</td>
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<tr>
<td>Summer II (8-week Session)</td>
<td>April 15</td>
<td>May 15</td>
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<tr>
<td>Summer III (First 6-week Session)</td>
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<td>May 1</td>
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<tr>
<td>Summer IV (Second 6-week Session)</td>
<td>April 15</td>
<td>May 15</td>
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### International Student Application Fees and Deadlines

All fees are non-refundable.

- The application fee is $50 if your application is submitted prior to the regular application deadline.
- If you submit your application after the application deadline but prior to the documentation deadline, the application fee is $125 in order to process your application in time to register for classes.
- Applicants with international academic documents will be assessed an additional foreign credential evaluation fee of $50.
- All international visa holders, regardless of visa type, must adhere to the **international application deadlines** (see chart below).
- All supporting documents and transcripts, with the exception of courses in progress, must be postmarked by the **documentation deadline** (see chart below).
- A new application must be completed and submitted for consideration for any subsequent semester for all incomplete applications after the documentation deadline.

### Deadlines for International Applicants (All Visa Types)

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<th>Term</th>
<th>Application Deadline</th>
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<tr>
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<td>Spring Full-Term and First 8-week Session</td>
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<td>Summer</td>
<td>March 1</td>
<td>April 1</td>
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*Note: International Students requesting an I-20 (F1) or a DS-2019 (J1) are not eligible to begin their study at UT Dallas during a 2nd 8-week session.*

*Contact the International Student Services Office at (972)883-4189 for more information.*
UT Dallas encourages all students to submit their application as early as possible, as it can take from 4 to 6 weeks to process. Applications submitted after the application deadline and before the documentation deadline will still be processed; however, a decision may not be reached in time for students to avoid late registration.

The last day to register for classes coincides with the last day to add class (See the Academic Calendar at http://www.utdallas.edu/).

After receiving an admissions acknowledgement letter which includes a student ID number, students may check http://www.utdallas.edu/enroll/ to determine the status of their application and whether all required documents have been received. Undergraduate students can also call the Office of Enrollment Services at (972)883-2270 to check the status of their application. Graduate students should contact the program to which they applied for more information.

First-Time Freshman Admissions

A “first-time freshman” is an applicant to UT Dallas directly following high school graduation. Applicants are still considered “first-time freshmen” if they earn college credit before high school graduation. If an applicant has earned college credit after high school graduation, he or she is not considered a “first-time freshman” and should consult admission requirements for a transfer student (see “Admission – Transfer Student Admissions – Freshman and Sophomore Transfer Students”, page 23 below).

The University’s policy is to admit applicants who are most able to benefit from and contribute to the University’s academic and research mission. The high academic expectations and complex educational curricula at UT Dallas require that entering freshman students have successfully completed a full college-track high-school curriculum and have demonstrated strong general verbal/quantitative aptitudes as measured on national standardized tests.

Automatic Admission

In accord with Chapter 51 of the Texas Education Code, students are automatically admitted to the University as first-time freshmen if they graduate in the top 10% of their class from an accredited Texas high school. Applicants must have graduated from high school during one of the two school years preceding the academic year for which they seek admission as first-time freshmen and have not attempted any higher education credits since graduation from high school. Applicants admitted because they are in the top 10% of their high school class may be required to complete additional preparatory work before enrolling in the University. They may also be required to remove any deficiencies in their high school coursework before graduating from the University.

Assured Admission Criteria

Students who take the Texas recommended high school curriculum and graduate in good standing and who possess any of the following scores and rankings are assured admission:

- an SAT score of 1200 (combined math and critical reading) and a class rank within the top 25 percent of his or her high school graduating class in an accredited high school.

  Or

- an ACT score of 26 or greater and a class rank within the top 25 percent of his or her high school graduating class in an accredited high school.

They may be required to complete additional preparatory work before enrolling in the University and to remove any deficiencies in their high school coursework before graduating from the University.

Entering freshmen should have successfully completed a full, college-track high school curriculum, including language arts (4 units), mathematics (3.5 units), science (3 units of laboratory science, excluding physical science), social sciences (3 units), foreign language (2 units in a single foreign language), and fine arts (0.5 unit in music, art, or drama). In addition, students must demonstrate strong general verbal/quantitative aptitudes as measured on national standardized tests (ACT or SAT).
Children of Public Servants Killed or Fatally Injured in the Line of Duty

Children of public servants designated by statute are assured freshman admission if they meet University requirements for high school or prior college-level grade point average and standardized test scores. This policy is in accordance with Section 51.803 of the Texas Education Code.

Reviewed Admission

All applications that do not qualify for either automatic or assured admissions will be reviewed. Applicants must have graduated from an accredited high school or satisfied equal requirements, and should have completed the high school unit requirements listed below (see item 9). Admission decisions are based on the applicant’s composite achievement profile, including:

1. high school class rank;
2. strength of academic preparation including the number and complexity of courses taken (Honors, AP, IB, etc.);
3. SAT-I or ACT scores;
4. record of achievements/honors/awards;
5. special accomplishments/work/service both in and out of school;
6. essays;
7. special circumstances that put academic achievements in context;
8. recommendations (suggested but not required);
9. successful completion of a high school curriculum that includes:
   a. four units of Language Arts, including at least one unit of writing skills;
   b. two units of a single foreign language (three units recommended);
   c. three and one-half units of Mathematics beginning with Algebra I or higher and including a course dealing with trigonometry, such as pre-calculus (four units recommended);
   d. three units of laboratory science, not including Physical Science;
   e. three units of Social Sciences, not including work study (four units recommended);
   f. one-half unit of Fine Arts (one unit recommended);
   g. one and one-half units of General Education Electives (two and one-half units recommended);
   h. the University also recommends one unit of Computer Science, one-half unit of Health, and one and one-half units of Physical Education;
10. for Texas residents, consideration may be given to socioeconomic and geographic information.

The review process gives primary consideration to the applicant’s scores on standardized tests and high school record although no specific class rank, test score, or other qualification by itself assures admission. The decision for each applicant will be to approve admission or to deny admission.

The achievement levels of students admitted to UT Dallas are illustrated by the following statistical profile of the entering freshman class of fall 2007.

- 75% of students were in the top 25% of their high school graduating class;
- 42% were in the top 10% of their class;
- 50% of students scored between 1130 and 1340 on the SAT-I;
- The average SAT-I score was 1238 (the 2007 national average SAT-I was 1017).

In addition to current university requirements for admission, applicants must also have either:

1. successfully completed the curriculum requirements for the recommended or advanced high school program or its equivalent; or
2. satisfied ACT’s College Readiness Benchmarks on the ACT assessment applicable to the applicant or earned on the SAT assessment a score of at least 1,500 out of 2,400 or the equivalent.

The above requirement may be satisfied if the applicant’s official high school transcript or diploma states that the applicant completed the portion of the recommended or advanced curriculum or its equivalent that was available to the applicant, but was unable to complete the remainder of the curriculum solely because courses necessary to complete the remainder were unavailable to the applicant at the appropriate times in the applicant’s high school career as a result of course scheduling, lack of enrollment capacity, or another cause not within the applicant’s control.
Freshman Honors Program
See “Honors Program” in Degree Programs section.

International Student Admissions (Students on Non-Immigrant Visas)
In addition to satisfying admissions criteria outlined in the catalog, international applicants from non-English-speaking countries must achieve a minimum score of 550 on the paper Test of English as a Foreign Language (TOEFL) or 213 on the computerized TOEFL, or 80 on the internet-based TOEFL. Students must have taken the test within two years of the date of admission. Admitted international students must meet the requirements of the Texas Higher Education Assessment prior to enrolling in classes (see page 42).

Deadlines
International applicants are strongly urged to meet all published deadlines and submit the application and supporting materials at least six months ahead of the intended date of enrollment. Applicants providing foreign credentials/documents should send all materials to the following address:

Office of Enrollment Services – Foreign Credentials
The University of Texas at Dallas, Mail Station HH 10
800 W. Campbell Road
Richardson, TX 75080-3021
FAX: (972) 883-6803 VOICE: (972) 883-2270

Fees
Certified English translations are required for documents prepared in a language other than English. There is an additional foreign credential evaluation fee for any student who has been educated outside the United States. These processing fees are required of all international students applying for admission to The University of Texas at Dallas.

Financial Responsibility
International students who plan to study with an F or J visa status must also provide evidence of financial support in order to obtain an I-20 or IAP-66 document.

Health Insurance and Documentation
International students are required to maintain approved comprehensive health insurance while enrolled at The University of Texas at Dallas. At registration, international students will be assessed a health insurance fee for the purchase of the UT System Student Health Insurance Plan. If there is evidence of continuing coverage under the UT System Employee Health Plan, a comparable mandatory employee plan, continuing mandatory coverage through a government-sponsored health plan, or continuing coverage that satisfies the requirements of USIA regulations with regard to J1 and J2 visa holders, the student can request that the health insurance charge be waived.

International students are required to have a mantoux tuberculin skin test prior to registration and must mail the completed documentation form to the UT Dallas Student Health Center – SU25, PO Box 830688, SU 1.606, Richardson, TX 75083-0688. See the Health Center web site (http://www.utdallas.edu/healthcenter/) for the documentation form and more information. International students will not be permitted to register until this requirement has been met.

Orientation and Registration
In addition to the requirements listed above, UT Dallas holds a mandatory orientation session for new F and J visa status international students. Students will not be allowed to register without a permit showing that they have attended orientation.
Admission

Readmission of Former UT Dallas Students

Students who are not registered for three successive long semesters (not including summer session) at The University of Texas at Dallas must re-apply for readmission to UT Dallas before they can reenter the University. Students must meet the requirements of the catalog in effect for the term of readmission and, if accepted, will be bound by that catalog.

Students who have attended another college or university since they were last enrolled at UT Dallas must submit official transcripts of all such work with the application for admission to the Office of Enrollment Services, The University of Texas at Dallas, Mail Station HH 10, 800 W. Campbell Road, Richardson, TX 75080-3021.

Continuing students who have been out less than three long (fall or spring) semesters who wish to reenter the University must update their personal information online. A visit to the Office of the Registrar may be required.

Students returning to the University following academic suspension, see “Scholastic Suspension” in the Policies and Procedures section.

Special Admissions

Academic Fresh Start

An applicant for admission who is a Texas resident may seek to enter this institution pursuant to the “academic fresh start” statute, Texas Education Code, Section 51.931. An applicant must make this request in writing to the Office of Enrollment Services before the starting date of the semester in which the applicant seeks to enroll. After the applicant submits that request, UT Dallas will not consider in its admissions decision any academic course credits or grades earned by the applicant 10 or more years before the starting date of the semester in which the applicant seeks to enroll. In addition, an applicant admitted under Academic Fresh Start will not receive any course credit for courses taken 10 or more years before enrollment. The granting of Academic Fresh Start will neither affect THEA status nor remove the applicant’s responsibility to meet other conditions for admission.

High School Concurrent Enrollment

The Dean of Undergraduate Education will consider the co-enrollment of highly qualified high school students in specific UT Dallas courses on an individual basis. Permission for enrollment in particular courses will be granted at the discretion of the Undergraduate Dean in consultation with the course instructor and the Associate Dean of the school offering the desired course.

Co-enrollment decisions will be based on the academic credentials of the applicant, the scholastic rigor of the requested classes, the course prerequisites, and the demand for the class on the part of ongoing UT Dallas students. Only the Dean of Undergraduate Education may admit a co-enrolled student to the University.

To request co-enrollment, a prospective student must complete an application for admission and submit a copy of his/her high school transcript and all standardized test results. In addition, a letter must accompany the application from the student’s high school counselor endorsing the student’s enrollment in a particular course. The counselor must also assure the University that the requested courses represent instruction unavailable and/or advanced beyond that offered at the student’s high school.

High school students will not be considered for co-enrollment until they pass all sections of THEA, or meet one of the following criteria which exempt them from THEA requirements:

1. Score at least 23 on the ACT composite score, with a minimum of 19 on both the English and math tests;
2. Students with SAT composite score of 1605 or higher, with 500 in Critical Reading, 500 in Math and 500 in Writing, are TSI/THEA exempt. SAT scores can be no more than five years old. Residual SAT cannot be used for THEA exemption;
3. TAKS Score established by the Texas Higher Education Coordinating Board required to meet UT Dallas THEA standards.

NOTE: Residual SAT or residual ACT scores (scores acquired for use in the same institution where the test was given) are not accepted.
Non-Degree Seeking Students

A non-degree student is an undergraduate student who does not intend to seek a degree at UT Dallas but who wishes to take courses for credit. Up to 15 hours of such course work credit may be transferred to any degree program at the University; acceptance of any of these hours is at the discretion of the Undergraduate Associate Dean of the School into which the student wishes to be accepted.

Non-degree students must meet all requirements for admission beginning on page 16 of the catalog. To continue enrollment beyond one semester, non-degree students will be bound by the same scholastic standards that apply to regularly enrolled degree-seeking students.

A non-degree student whose work is unsatisfactory and who has been suspended from the University for academic reasons may not re-enroll without permission of the Dean of Undergraduate Education.

Non-degree students may not be eligible for financial aid. It is recommended that applicants contact the UT Dallas Financial Aid Office for more information at (972) 883-2941.

NOTE: International students must be enrolled in a degree program and therefore may not enroll as non-degree students; exceptions may be made for the summer session for those international students enrolled in a degree program elsewhere.

Second Baccalaureate Degrees

A student who has graduated from UT Dallas or any other regionally accredited college or university with an undergraduate degree may enter another undergraduate program at UT Dallas only with the approval of the Associate Dean of Undergraduate Education of the school housing the degree sought.

Transient Students

Students pursuing degrees at four-year colleges and universities other than The University of Texas at Dallas and who desire to transfer credit hours taken at UT Dallas to the degree-granting institution should apply for admission as transient students. Students will be admitted based on evidence of good academic standing at their home institution. In addition, students who have previously attended Texas state-supported institutions must provide evidence of their current TSI/THEA status.

Transient admissions are valid for a single semester. While UT Dallas credits are generally transferable to other institutions, the student is urged to seek prior approval of course work to be completed at UT Dallas from the institution to which it is to be transferred.

Transfer Student Admissions

Admission Through the Comet Connection

Many UT Dallas students do not take the conventional path that leads straight from high school to a four-year college degree. The Comet Connection Program was specifically created to enable transfer students to blend their college experiences seamlessly – and without financial penalty. It offers a Guaranteed Tuition Program for four years through the UT Dallas Plan. For more information or to receive an updated list of participating community colleges, contact one of our admissions counselors at the Welcome Center (972-883-2270) or visit http://www.utdallas.edu/connect/.

The University of Texas at Dallas accepts applications for admission from transfer students for the fall, spring, and summer semesters. UT Dallas welcomes applications from students who have begun their college work and are in good standing at other institutions of higher education. Classifications for admission, which are based on transferable semester credit hours, determine the admission criteria.

The University accepts for transfer credit only academic post-secondary course work completed with a grade of C (2.00 on a 4.00 point scale) or higher from regionally accredited institutions of higher education. The University of Texas at Dallas does not offer credit for nonacademic course work such as vocational, developmental or remedial studies, nor does it grant credit
for prior experiential learning. Course work that is accepted for transfer credit is applicable toward satisfying requirements for a specific UT Dallas major according to the same criteria as those used for equivalent UT Dallas courses (see Appendix II for further information on the transfer of lower-division course credit). Prospective transfer students from Dallas-area community colleges should refer to the UT Dallas Transfer Guides, available at the UT Dallas Office of Admissions, online at http://www.utdallas.edu/transferguides/, and at the community college academic advising offices to learn more about curricula appropriate to the various UT Dallas majors.

As soon as an application for admission, transcripts and any required test scores have been received, the Admissions Committee will evaluate the student’s record to determine which credits earned at another college or university will transfer to UT Dallas.

The application of transfer credit to degree plans must be completed within the first semester of enrollment. An undergraduate advisor in the student’s major, in consultation with the Associate Dean for Undergraduate Education, will determine how the transfer credits apply to UT Dallas degree requirements. The faculty, acting through the Associate Dean of Undergraduate Education, has the ultimate responsibility for applying transfer credit to their specific major requirements. Students are urged to contact their advising office upon receipt of the letter informing them of their admission to UT Dallas. See, also, the section on the Texas Success Initiative and THEA Placement Testing on page 42.

Applicants seeking admission to UT Dallas should be aware that they will need at least 51 upper-division hours to graduate (see “Graduation Requirements,” page 31).

**Freshman and Sophomore Transfer Students**

Applicants to UT Dallas who have previously taken courses at one or more other accredited institutions of higher education and who are classified as freshmen or sophomores (see “Classification of Students,” page 25) will be reviewed for admission using the same criteria described above for first-time freshmen. In addition, freshmen applications must have a cumulative GPA of at least 3.00 on a 4.00 scale, for all post-secondary academic course work. Sophomore applicants must have a cumulative GPA of at least a 2.50 on a 4.00 scale.

**Junior and Senior Transfer Students**

Applicants to UT Dallas who have previously taken courses at one of more other accredited institutions of higher education and who are classified as juniors or seniors (See “Classification of Students,” page 25) are admitted automatically if their cumulative GPA for post-secondary academic course work is 2.50 or better, on a scale of 4.00 and they are judged to be making satisfactory academic progress.

Applications that do not qualify for automatic admission will be reviewed at the discretion of the school offering the applicant’s major. Associate Deans will pay particular attention to the academic content and grades of the applicant’s college-level work.

**Transfer Students Admitted on Probation**

If admitted on probation students must:
1. see an academic advisor before registering,
2. may not register for more than twelve hours,
3. may not drop or withdraw from any classes, and
4. must earn a grade of C or better in classes.
5. other conditions as prescribed by the admitting Associate Dean.

Students admitted on probation must earn a GPA of at least 2.20 for the first semester of enrollment. Failure to meet these conditions will result in suspension. Students admitted on probation by the Associate Dean of Undergraduate Education who are subsequently suspended from the University may be readmitted only by the Associate Dean (see “Scholastic Suspension,” page 41).
Academic Policies and Procedures

Academic Advising
Academic advising is an integral part of undergraduate education. The goal of academic advising is to assist students in taking responsibility for developing meaningful educational plans compatible with their career and personal goals. Advising is more than imparting specialized knowledge; it includes helping students formulate important questions about the nature and direction of their education and helping them find answers to those questions.

While advisors confer with students about courses and educational experiences, students themselves are responsible for defining the content of their academic program and making progress toward an academic degree. Advisors will assist students in designing an appropriate course of study that will satisfy requirements for graduation (see “Academic Degree Requirements,” page 69) as well as offer information on particular courses and university rules and procedures. All students must verify their class schedule each semester, must see that necessary transactions are completed, and are responsible for all documentation related to schedule changes and other transactions.

Students who have chosen a major should meet with an academic advisor in the appropriate school regularly and in a timely manner prior to semester drop deadlines and course registration. All freshmen are required to meet with their advisor in order to register for classes (see “Registration,” page 36). Students admitted to UT Dallas as freshmen or as sophomores who have not declared a major are advised by the Undergraduate Student Advising Office, an integral part of the Office of Undergraduate Education. Students remain the responsibility of Undergraduate Education until they declare a major, at which time advising will be undertaken by an advisor in the student’s program. Students must declare a major by the time they become juniors in order to have their program advising conducted by the advisors in the school in which they are registered.

Students are strongly encouraged to meet with their academic advisor, especially when they have earned 75 semester hours to establish and/or review their degree plan.

Academic Grievances
A student having a grievance regarding academic concerns may have the issue considered. Procedures for appeals of academic decisions can be found on page 335.

Academic Progress
A student is considered to be making satisfactory scholastic progress when he or she is carrying an approved schedule of classes, is not on probation, and has a GPA of at least 2.00 (C average) in the major and overall. Students that habitually drop a significant fraction of their schedule may lose the right to drop or may be dismissed from the University for failure to make adequate academic progress.

Adding a Class
See “Registration - Dropping, Withdrawing or Adding Courses” in this section.

Auditing Courses
Auditing allows a student to observe the instruction of a course without earning credit. Computer Science and Engineering courses, Geoscience courses, Physical Education courses, Foreign language courses, Studio/Ensemble courses, online courses, and any courses that charge a lab fee may not be audited. Participation and discussion is at the discretion of the instructor. Auditing grants only the privilege of hearing and observing and does not grant credit or access to online course tools.

A student may obtain an Audit Form in the Office of the Registrar beginning the first day of classes through Census Day. Students may audit courses only by obtaining permission of the instructor and by completing audit registration procedures. Please consult http://www.utdallas.edu/student/registrar/ for more detailed audit procedures and associated fees.
Change of Address, Email or Name
A change of address may be completed online through the Student Information System (Galaxy).

A change of email may be completed online through the Student Information System (Galaxy). Electronic communication is the preferred means of communicating important academic information. Students are encouraged to keep their email address current. A student's UT Dallas email address is the official method of communication between faculty, administration and the student. It is the student's responsibility to maintain his/her UT Dallas email account at all times.

For name changes, students must fill out a ‘Name Change Form’ in The Office of the Registrar. Students must also bring a copy of their driver's license or their marriage certificate for proof of the name change.

Students must provide accurate local and permanent addresses and telephone numbers to Registrar’s Office. This office must be notified immediately of any changes in address or telephone number. *All official correspondence is sent to the address last given to the Registrar. If a student has since moved but failed to correct this address, he or she will not be relieved of responsibility on the grounds that the correspondence was not delivered.

Classification of Students
Freshmen and sophomores are lower-division students.

  Freshman: A student who has successfully completed fewer than 30 semester credit hours (SCH).
  Sophomore: A student who has successfully completed 30-53 SCH.

Juniors and seniors are upper-division students.

  Junior: A student who has successfully completed 54-89 SCH.
  Senior: A student who has successfully completed 90 or more SCH.

Correspondence – Email
The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange.

All official student email correspondence will be sent only to a student's UT Dallas email address and UT Dallas will only consider email originating from an official UT Dallas student account. This allows the University to maintain a high degree of confidence in the identity of all individuals corresponding and the security of the transmitted information.

The University of Texas at Dallas furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources provides a method for students to have their UT Dallas mail forwarded to other accounts. To activate a student UT Dallas computer account and set email for forwarding go to http://netid.utdallas.edu/.

Courses

Course Load

Long Semesters – Although there is no general minimum course load, to be considered full-time, an undergraduate student must be enrolled in at least 12 semester credit hours during each long term (fall and spring semesters). The standard full-time course load is 15 semester credit hours.

Students wishing to register for more than 18 semester credit hours must have the permission of the Associate Dean of their school; undergraduates with an undeclared major may seek that permission from the Dean of Undergraduate Education. Students authorized to enroll in more than 18 semester credit hours in a long semester may not withdraw from any class without permission of the Associate Dean in their school or the Dean of Undergraduate Education for those students without
declared majors. Failure to secure that permission before withdrawing from a class will limit the student to a maximum of 18 semester credit hours in future semesters.

**Summer Semesters** - The maximum course load for a summer session is normally six semester credit hours for the five-week term, eight semester credit hours for the eight-week term, or twelve semester credit hours for the eleven-week term. Special arrangements may be made for a student enrolled in the twelve-week summer term to take up to 16 semester hours if the student needs no more than 16 semester credit hours to graduate at the end of the summer session.

In considering course load, students must be sensitive to special considerations such as financial aid and family health insurance which typically require some minimum number of hours per semester to maintain eligibility.

**Course Numbering System**

UT Dallas courses are assigned an abbreviation of the name of the subject area followed by a four-digit course number. The **first digit** of the course number gives the general level of the course, i.e., a 1 or 2 indicates that the course is of undergraduate freshman or sophomore level respectively, and a 3 or 4 indicates that the course is of undergraduate junior or senior level, respectively. Graduate courses begin with the digits 5 through 8.

The **second digit** of the course number indicates the semester credit hour value of the course. A course is given semester credit hour values according to the number of hours per week the course meets; the typical course is three semester credit hours. The type of course (e.g., lecture, laboratory, or seminar) and its meeting times determine the number of meetings per week and the length of each meeting. Variable credit-hour courses will have a “V” in the second position of the course number. The semester Class Schedule (online Course Lookup) will specify the semester credit hours available for a variable course during any given semester.

The **final two digits** give the course a unique number within a subject area. In some instances, a second course prefix and number in parentheses follows the first. The second course prefix and number designate the State of Texas Common Course Numbering System (TCCNS) equivalents when available. TCCNS is a standard set of designations for academic courses. Most Texas community colleges and universities have adopted this system to facilitate the transfer of academic credit from one institution to another. Wherever possible, courses at UT Dallas have the TCCNS number, although the subject designation may differ (e.g. BA versus BUSI for the Business Administration prefix).

In all cases, the course description is followed by an indication of the approximate number of contact hours per week in a semester for any lecture and/or laboratory components of the course; for example, (2-4) indicates 2 contact hours of lecture and 4 contact hours of laboratory per week.

**Course Offerings**

One of the following frequency of course offering codes is found at the end of each course description in this catalog:

- **S** = Course is offered at least once each long semester.
- **Y** = Course is offered at least once a year.
- **T** = Course is offered at least once every two years.
- **R** = Course is offered based on student interest and instructor availability.

**Course – Repeating**

See “Repeating Course Work” page 40.

**Course Substitution (Disability Services)**

Students requesting substitutions of course work as a reasonable accommodation must request this accommodation through the Disability Services Office according to the following deadlines:

- Students who entered as freshmen from high school: by the end of their fourth semester at UT Dallas
- Students who entered as transfer students: by the end of their second semester at UT Dallas.
Please contact Disability Services with any questions about this type of accommodation or to initiate the request process.

To request a course substitution students must:

1. Meet with the Disability Specialist at Disability Services to discuss their need for a course substitution and to receive the application forms. Fully complete and sign the application form.
2. Provide current documentation of said disability to update material on file, if requested, and compose a narrative explaining the reasons for the request. This narrative must include any previous experiences with similar course work attempted prior to completing the application.
3. Students who are not currently served by Disability Services or have not previously been diagnosed with a disability should call Disability Services at (972)883-2098 to schedule an intake appointment.
4. Meet with the Associate Dean for Undergraduate Education in the school with which you are registered to discuss the proposed substitution and its potential impact on your degree program and to obtain the Associate Dean’s signature on the application form. Courses approved by The University of Texas at Dallas will be the primary source for all approved course substitutions.
5. Completed forms must be returned to the Disability Services Office.

Credit/No Credit Classes

The Credit/No Credit option is intended to encourage students to take courses in topics outside of their major area where they would be competing with a significant number of students who are majoring in these outside areas. The Credit/No Credit option gives students the opportunity to broaden their education with less emphasis on grade points. A student will receive credit for C (2.00 on a 4.00 scale) work or better. No credit will be given for work that is below C (2.00 on a 4.00 scale).

The signature of the student’s academic advisor is required on the Credit/No Credit request form. Students must submit completed Credit/No Credit grading requests to The Office of the Registrar by the Census Day of classes of the semester or term. Courses that were originally taken for a letter grade may not be repeated for Credit/No Credit.

No change of grade designation from grade to Credit/No Credit or Credit/No Credit to grade may be given after Census Day.

A course may be designated by the instructor as unavailable to students on a Credit/No Credit basis. Conversely, some courses may only be available for Credit/No Credit.

A student may not take any course used to satisfy a Core Curriculum requirement, any course in the major or minor that is listed as a major and related course on the student’s degree plan, or major prerequisite, on a Credit/No Credit basis if a letter grade is normally awarded in those courses. Students in the Interdisciplinary Studies program may not exercise a Credit/No Credit option in their Foundations or Concentration.

For baccalaureate degree requirements, the Credit/No Credit option is limited to 12 semester credit hours or 20% of UT Dallas upper-division coursework, which ever is smaller. Courses in a student’s major that are designated as Credit/No Credit are not included in this limit.

Courses taken on a Credit/No Credit basis will not be used in determining a student’s GPA. Care should be taken by students in selecting courses for the Credit/No Credit option, as this may affect eligibility for honors. (See “Graduation with Honors,” page 32)

Credit by Examination (AP-CLEP-IB-SAT)

Examination credit is evaluated only at the student’s request. Students wishing to receive examination credit must first meet with an academic advisor to complete a request form that is then submitted to the Office of the Registrar.

Documentation of any lower-division credit established by examination through such programs as the AP (Advanced Placement Program) or the SAT II which the student wishes to apply toward college credit should be received by the University prior to registration. Academic hours awarded through credit by examination become a permanent part of the student’s official UT Dallas college transcript.
Credit for admission may be established through testing programs such as the Advanced Placement Program (AP), the College Level Examination Program (CLEP), the International Baccalaureate (IB), and SAT II subject examinations. Guidelines for credit by examinations are available on the UT Dallas website at http://www.utdallas.edu/dept/ugraddean/. Test scores not on official transcripts must be submitted directly from the testing agency. UT Dallas will provide college credit to those who present an International Baccalaureate Diploma in accordance with Texas state law.

Not more than six semester hours of extension, credit by examination, or correspondence credit may be applied toward upper-division requirements. This credit must be upper-division credit earned at an appropriate accredited institution or through acceptable scores on approved tests. The University does not offer correspondence courses.

**Criminal Background Check**

Certain programs require students to submit to and satisfactorily complete a background check review as a condition of admission and/or participation in education experiences. Students who refuse to submit to a background check or who do not pass the background check may be dismissed from the program. The student is responsible for the costs associated with the criminal background check.

**Dean’s List**

The top ten percent of all students in each school who complete 12 or more Semester Credit Hours during the fall or spring semesters will be recognized as members of the Dean’s List of their respective schools. Students without a declared major are eligible for the Office of Undergraduate Education Dean’s List.

**Degree Plans**

A degree plan is a definition of the course of study required to fulfill the requirement for graduation. A degree plan is “major specific” and is established through collaboration with the major’s academic advisor and the student. Course changes within university sanctioned degree plans may be made with the approval of the Associate Dean of Undergraduate Education (ADU) or his or her designee. An initial degree plan must be filed as soon as possible after entering the major. The initial degree plan will be kept in the office of the academic advisor, ADU, or program head and will form the basis of the student’s advisement.

In the semester preceding that in which a student plans to graduate the student is required to meet with her/his academic advisor to prepare a final degree plan that will be forwarded to the Office of the Registrar, along with the student’s application for graduation (See “Graduation Requirements,” page 31).

NOTE: A change of major requires preparation of a new degree plan.

**Fast Track**

See “Graduate Courses Taken in Fast Track Options,” page 30.

**Grades**

**Grade Changes**

**Faculty Initiative**

After a final grade has been recorded by the Registrar, faculty may change grades only to correct a clerical error or replace a grade of “incomplete”. A faculty initiated change of a final grade requires the written approval of the instructor, the department or program head or School ADU, and the Undergraduate Dean. Such grade changes must be submitted by the end of the eighth week of the following long semester after the grade was awarded.

**Student Request**

A student has the right to request a review of the grades received in any class.
Students must petition for a grade review by the end of the eighth week of the following long semester after the grade was received. The request must be submitted in writing to the appropriate faculty member who then has the remainder of that semester to take action (See also “Academic Appeals” in Appendix I).

**Grade Point Average**

Grade points are computed by multiplying the points for each grade by the number of credit hours; for example, 4.00 (A) x 3 (hours) = 12 grade points. A student’s grade point average (GPA) is determined by dividing the total number of grade points earned by the number of semester hours for which a grade other than I, NC, or CR is received.

NOTE: Only grades earned at The University of Texas at Dallas are used in calculating the student’s GPA.

An undergraduate student is limited to three grade-bearing enrollment attempts for any specific class. With regard to repeats, the grade from the first repeat will substitute for the original grade to determine a student’s grade point average and to satisfy degree requirements. A second repeat will result in both repeats being averaged when computing the student’s cumulative grade point average. (See “Repeating Course Work,” page 40 for additional information).

**Grading Scale**

UT Dallas adopted the following grade scale for all undergraduate students effective fall 2000. Grades for courses completed prior to fall 2000 accrue point values as shown in the appropriate catalog.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
<th>Grade Points per Semester Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>Excellent</td>
<td>4.00</td>
</tr>
<tr>
<td>A</td>
<td></td>
<td>4.00</td>
</tr>
<tr>
<td>A-</td>
<td></td>
<td>3.67</td>
</tr>
<tr>
<td>B+</td>
<td>Good</td>
<td>3.33</td>
</tr>
<tr>
<td>B</td>
<td></td>
<td>3.00</td>
</tr>
<tr>
<td>B-</td>
<td></td>
<td>2.67</td>
</tr>
<tr>
<td>C+</td>
<td>Fair</td>
<td>2.33</td>
</tr>
<tr>
<td>C</td>
<td></td>
<td>2.00</td>
</tr>
<tr>
<td>C-</td>
<td></td>
<td>1.67</td>
</tr>
<tr>
<td>D+</td>
<td>Poor</td>
<td>1.33</td>
</tr>
<tr>
<td>D</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>D-</td>
<td></td>
<td>0.67</td>
</tr>
<tr>
<td>F</td>
<td>Failure</td>
<td>0.00</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>Pass</td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>Withdrawn</td>
<td></td>
</tr>
<tr>
<td>WP</td>
<td>Withdrawn Passing</td>
<td></td>
</tr>
<tr>
<td>WF</td>
<td>Withdrawn Failing</td>
<td></td>
</tr>
</tbody>
</table>

**Incomplete Grades (I)**

A grade of Incomplete may be given, at the discretion of the instructor of record for a course, when a student has completed at least 70% of the required course material but cannot complete all requirements by the end of the semester. An incomplete course grade (grade of I) must be completed within the time period specified by the instructor, not to exceed eight weeks from the first day of the subsequent long semester.

Upon completion of the required work, the symbol I may be converted into a letter grade (A through F) by the instructor. If the grade of Incomplete is not removed by the end of the specified period, it will automatically be changed to F.

Extension beyond the specified limit can be made only with the permission of the instructor, the student’s Associate Dean and the Undergraduate Dean. A student may not re-enroll in a course in which a grade of I remains.
Students may obtain a petition/documentation form for an Incomplete in the office of the student’s Undergraduate Associate Dean. The form is to be submitted to the instructor from whom the Incomplete is sought. If a significant fraction of a semester is missed with cause, see the section on “Dropping, Withdrawing, or Adding Courses,” page 37.

An instructor assigning an Incomplete must submit the petition/documentation form containing a description of the work required to complete the course to the Undergraduate Associate Dean of the school offering the course. Upon approval, a copy of the petition will be forwarded to the student’s Undergraduate Associate Dean to be retained with the student’s academic record. The instructor alone will be responsible for determining whether the requirements for completion are met and for assigning the grade in the course.

However, if the instructor who has signed the Incomplete is no longer associated with UT Dallas and the work is completed within the time allowed before the Incomplete lapses to an F, the Associate Dean of the instructor’s college may assign a committee of appropriate faculty to evaluate the material and/or obtain any other information which may be required to assign the grade in the course.

**Mid-Term Grades**

Students are issued mid-term grades to apprise them of their progress within the semester. These grades are not a part of the permanent record and will not appear on academic transcripts. Some classes will only issue a grade of credit or no credit at mid-term.

**Graduate Courses**

Upper-division undergraduates who are within 30 hours of completing the baccalaureate degree may petition their major’s Associate Dean to take graduate courses by completing the appropriate form available in the student’s academic advising office. If approved, these graduate courses can be applied toward satisfying undergraduate degree requirements or can be designated for future application toward a graduate degree requirement at UT Dallas. The student must declare at the time of registration for the course, on a form provided by the Undergraduate Associate Dean, how each approved course is to be applied. Once applied, the options cannot be changed. Approvals will be subject to the conditions outlined in the following sections.

**Graduate Courses Applied Toward an Undergraduate Degree**

With the approval of the student’s Undergraduate Associate Dean, up to 12 semester credit hours of graduate work taken as an undergraduate may be used for completing any baccalaureate degree at The University of Texas at Dallas. Pass/fail grading for graduate courses will be permitted in this category but must be approved by the instructor prior to the start of class.

**Graduate Courses for Possible Future Use as Graduate Credit**

Undergraduates may take up to 12 semester credit hours of graduate courses to reserve for possible application toward a graduate degree. To register, undergraduate students must obtain permission from the course instructor and from the graduate advisor of the program in which the course is offered. Such courses with an earned grade of B or better will be eligible for application to the student’s graduate record when the student is admitted to a graduate program. Courses so taken will not apply to the student’s undergraduate record and will not affect the student’s undergraduate GPA.

**Graduate Courses Taken in Fast Track Options**

A number of programs at The University of Texas at Dallas offer an accelerated Fast Track option that allows students to take graduate-level classes while undergraduates. Specific admission requirements for Fast Track programs can be found within the descriptions of majors. Undergraduate students at UT Dallas who have been admitted to Fast Track programs leading to baccalaureate/master’s degrees may, with the permission of the student’s Undergraduate Associate Dean and graduate advisor, take a maximum of 15 specified semester credit hours of graduate work. The graduate hours may be used to complete the baccalaureate degree and also to satisfy requirements for the master’s degree. The grade earned in the graduate coursework must be a B (3.00) or better to be applied to the master’s degree requirements.

Graduate programs at UT Dallas will accept admission to a Fast Track program as satisfying Graduate Record Exam (GRE) criteria for admission to the graduate program. The School of Management requires students to meet its graduate admission
requirements including completion of the Graduate Management Admissions Test (GMAT) prior to receiving the baccalaureate degree.

**Graduation**

**Application for Graduation**

Students must complete an ‘Application for Graduation’ with their academic advisor and submit the application to The Office of the Registrar by the posted deadline. The procedures and deadlines for submitting this application are listed in the online Comet Calendar. Students are encouraged to apply for graduation prior to registering for their last semester. Students who apply after the posted deadline will be required to pay a non-refundable late fee. Completion of the graduation application is an acknowledgement that if meeting all degree requirements, the student will graduate at the end of the semester. Students cannot withdraw an Application for Graduation once it has been submitted.

**Graduation Ceremonies**

Ceremonies are held at the conclusion of each spring and fall semester. There is no summer graduation ceremony. Students scheduled to graduate following a summer semester may petition to take part in the preceding spring ceremony or following fall ceremony (see http://www.utdallas.edu/registrar/graduation/ for details). Students who graduate at the conclusion of the fall semester may elect to participate in their graduation ceremony at that time or wait until the following spring graduation ceremony to participate.

Honors Convocation ceremonies are held at the conclusion of each spring semester.

**Graduation Requirements**

1. Each candidate for a baccalaureate degree must complete a minimum of 120 semester credit hours of course work (certain degree programs require more than 120 hours). Within this requirement, students must complete the following:
   - At least 51 semester credit hours of upper-division (3000/4000 level) course work, to include a minimum of 12 hours of advanced courses in the major subject.
   - At least 25 percent of the total semester credit hours required (for the School of Management, 50 percent of the total Business credit hours) must be taken at The University of Texas at Dallas.
   - At least 24 of the last 30 hours needed for a baccalaureate degree must be taken at The University of Texas at Dallas.
   - A maximum of three semester credit hours of physical education activity can be applied toward degree requirements.

2. A minimum GPA of 2.00 on a 4.00 scale (C average) is required in the major and related courses, any declared minor, and overall. Major preparatory classes are not included in the calculation of the major GPA. Only grades earned at The University of Texas at Dallas are used in calculating this GPA.

3. Students must satisfactorily complete all degree requirements specified by the school or college in which the degree is offered. (See “Degree Programs,” page 69) In many instances, the college/school/department academic program requirements may exceed the University core requirements.

4. Students must satisfy the Core Curriculum which is described in full on page 69.

5. A candidate for a degree must be enrolled at UT Dallas during the semester in which The Office of the Registrar confirms completion of degree requirements. Students may register in absentia if enrollment in a course is not required. (In-absentia registration is explained on page 33 of this catalog.)

6. Students must complete an official degree plan prepared by the academic unit. The degree plan must be on file no later than the completion of 75 earned semester credit hours.
7. To qualify for a second baccalaureate degree, double degree, or double major from The University of Texas at Dallas, please review the “Other Degree Requirements” on page 73.

Note: General and specific requirements for degrees in undergraduate programs may be altered in subsequent catalogs.

**Graduation Under a Particular Catalog**

Provided the requisite courses continue to be offered, and given continuous enrollment (see section on “Readmission of Former UT Dallas Students” on page 21), students are bound by the Core Curriculum requirements of the catalog in force at the time of admission, within that catalog’s six-year limit. For students who change their major, the graduation requirements for that major will be those stated in the catalog in force at the time of the change. The Core Curriculum requirements, however, remain those of the catalog in force at the time of matriculation unless the student specifically chooses those of a more recent catalog or the catalog in force at the time matriculation expires. Should any requisite major courses cease to be offered, substitutions would be made by the Associate Dean of Undergraduate Education.

Should any requisite Core Curriculum courses cease to be offered, substitutions will be made by the Office of Undergraduate Education. These requirements must be met by all students pursuing a baccalaureate degree at The University of Texas at Dallas, regardless of their major. A specific course may be used to satisfy only one core requirement. Individual academic programs may require courses contained in parts of the University Core Curriculum to satisfy particular degree requirements. Students may be required to take extra courses if they fail to select these courses.

Administrative requirements such as minimum grade point requirements may change for all students with the issuance of a new catalog.

**Graduation with Honors**

Students who show particular distinction in scholarship at the University are afforded the opportunity of graduating with Latin Honors and/or School Honors. Only grades earned at The University of Texas at Dallas are used in determining graduation with honors.

**Collegium V**

Students graduating with Collegium V Honors will complete at least 24 semester credit hours within the programs and maintain a 3.50 cumulative grade point average on at least 45 hours of graded credit. In their senior year, students must complete a senior thesis or senior project. They also must participate in a select number of extra-curricular events over the course of their academic career.

**Latin Honors**

Graduates may earn one of three degrees of Latin Honors: summa cum laude, magna cum laude, or cum laude. Requirements for graduation with honors are as follows:

A minimum of 45 UT Dallas graded credit hours are required. Each Latin Honors level requires a minimum grade point average (GPA) to be attained over all course work taken at The University of Texas at Dallas. In the case of a student with a double major who wishes to graduate with honors, a single honors designation will be awarded. Students graduating with double degrees who wish to receive honors for both degrees must complete separate honors requirements for each degree.

The grade point requirements for Latin Honors are issued by the University in the summer of each academic year and apply to graduates in the following academic year. The thresholds for each level of honors are determined from a rolling average of the grades of all graduates for the previous six long semesters. Averages are computed separately for each school within the University. The GPA that represents the top five percent of all graduates in a particular school will be considered the threshold for awarding summa cum laude honors. The GPA that defines the next 10 percent in each school will be the lower limit for magna cum laude. The average grade that defines the next 15 percent in each school will be considered the benchmark for awarding cum laude honors. A minimum GPA of 3.40 is required for any Latin Honors.
Major Honors
Students may graduate with honors from their individual schools based on participation in their school’s Honors Program. Each program provides two levels of recognition, Honors and Distinction. All students must have completed a minimum of 30 graded semester credit hours to qualify for major honors.

The requirements for school honor’s recognition vary across schools. Students should review the descriptions within the school section of the catalog. To graduate with school distinction honors, students must complete an undergraduate thesis judged by faculty to be of exemplary quality.

Collegium V, Latin, and School Honors are all reported on students’ transcripts and diplomas.

In Absentia Registration
In absentia registration provides an opportunity for a degree candidate to register for the semester in which the degree is to be completed without taking formal course work. In absentia registration is permissible for a degree candidate who is removing an incomplete grade (I) or for a degree candidate who has left the University and is transferring authorized and approved credit to qualify for completion of a degree. In absentia registration requires a nonrefundable/nontransferable fee (see “In Absentia Fee” on page 51).

Independent Study
A student may take a maximum of 20 percent of the total hours of course work undertaken at UT Dallas as Independent Study.

International Education
Information about educational opportunities in other countries, including study abroad, international internships, international research opportunities, and international scholarship programs, is available at the Office of International Education (OIE), Jonsson Building, 5th Floor, Room JO 5.504. Students are required to attend an advising session before seeking staff assistance in selecting the program most appropriate to their individual needs and interests. The advising sessions include University policies governing study abroad, program options, funding sources, and application and selection procedures. Information is also disseminated through publications, special events, group meetings, individual appointments, reference materials and at the OIE website: http://www.utdallas.edu/oie/.

Eligibility
Undergraduates must have earned a minimum of 30 credit hours at The University of Texas at Dallas. Freshmen, first-semester transfer students, non-degree seeking students, and students who plan to graduate within one semester are not eligible to participate.

All students must have a minimum (semester or cumulative) GPA of 2.00. Students with less than a 2.50 GPA may not be eligible for some affiliate or exchange programs for study abroad. Study abroad is limited to two (2) semesters.

Financial Assistance
Information about other funding opportunities for study abroad is available at The Office of Financial Aid. Students are eligible to use financial aid for those programs that are affiliated with The University of Texas at Dallas. Programs outside of official affiliations are not eligible for financial aid. Students are strongly encouraged to have a declared major; otherwise there could be financial aid implications.

Grades/Credits
Credits earned in Exchange Programs will translate directly onto The University of Texas at Dallas transcript as an earned letter grade. All other program earned credits will be transcribed as Credit/No Credit. Grades of 2.00 on a 4.00 point scale will be
reviewed by The Office of the Registrar and assigned credit. Course work will be reflected on the student’s transcript but only courses taken on the UT Dallas campus are considered in the UT Dallas GPA.

No more than 20% or 12 hours (whichever is smaller) of upper-division credits taken as Credit/No Credit may be used toward graduation credits. Courses in a student’s major that are designed as Credit/No Credit are not included in this limit.

Core Curriculum courses taken while studying abroad must be taken for a grade. A 2.00 on a 4.00 scale must be earned to transfer to UT Dallas.

It is the student’s responsibility upon returning to the UT Dallas campus to provide The Office of the Registrar with the institution’s published catalog description of the course and an official transcript.

Official Transcripts

Transcripts received from foreign institutions in a language other than English must be translated by a professional service for official posting of transfer credit. The use of a professional translation service will ensure the authenticity, consistency, and accuracy of transferring credits. It is the responsibility of the student to provide an English translation of the transcript and to pay any associated costs; transcript translation services are not provided by the University.

Programs

The Associate Deans in each school determine how general courses and Core Curriculum courses will be applied to The University of Texas at Dallas degree plan. Approval may be required by more than one Associate Dean for courses outside the student’s major. All courses must be pre-approved by the Associate Dean.

Affiliated Studies

Students register for affiliated studies (STAB Generic) when they participate in study abroad programs by organizations and institutions with which the University has an affiliation. Students enrolled in affiliated studies are considered full-time students. Credits are awarded as transfer credit. Students are not assessed UT Dallas tuition and fees and are responsible for paying program fees directly to the affiliate program.

Exchange Programs

Students in exchange programs are registered for a block of coursework in study abroad (STAB Exchange), Associate Deans in the appropriate academic departments review the student’s work to determine equivalent UT Dallas credit upon completion. Students will earn resident credit. Students are assessed the normal UT Dallas tuition and fees for the number of semester credit hours they undertake for that particular semester.

Faculty-led Programs

Academic units may offer courses taught abroad as part of their regular curriculum. Students who take these courses follow normal registration procedures and are assessed normal tuition and fees for the number of semester credit hours they undertake. Additional fees are charged to cover program costs.

Travel Warnings

The University of Texas at Dallas does not recommend or support study abroad programs in regions of the world for which the U.S. State Department has issued a “Travel Warning.” Applications to study in regions affected by Travel Warnings will not be approved. UT Dallas students will not be eligible to apply their financial aid for such experiences. A Travel Warning is an official recommendation for travelers; it usually discourages non-essential travel in the specified region. Because Travel Warnings are issued in response to specific world events, however, they may have expiration dates.

Internship/Cooperative Education Program

The Internship/Cooperative Education Program (Internship) places students in work assignments related directly to their fields of study. The experience provides students with an opportunity to apply what they learn in the classroom to practical settings while
responding to the immediate needs of employers. In addition, students are able to stay in school and earn money to defray college expenses, clarify academic interests, and target specific job markets.

Internships may be taken for credit depending on the student’s degree program requirements. The University of Texas at Dallas has a flexible internship program and arrangements include the following:

- Parallel: full-time or part-time work and full-time or part-time school.
- Summer: full-time or part-time summer employment.
- Alternating Semesters: full-time work alternating with semesters of full-time school.

For more information about the program, contact the Career Center in McDermott Library 1.312; Telephone: (972) 883-2943.
Email: careercenter@utdallas.edu
Website: http://www.utdallas.edu/student/career/.

**Major**

**Change of Major**

Students wishing to change majors should complete a ‘Change of Major Request Form’ in their academic advisor’s office before registration and no later than the first day of classes of a semester/term.

Students with a cumulative GPA below 2.00 may only change their major with permission from the Associate Dean of their current major and the Associate Dean of their intended major. Both Associate Deans’ signatures are required on the ‘Change of Major Request Form’ prior to its submission to the Office of the Registrar.

If the change of major is approved, the student will then be responsible for meeting all program requirements and course prerequisites of the catalog in effect at the time of the change. In the first semester of change to a new major, the student must meet with an academic advisor to prepare a degree plan. The Core Curriculum requirements, however, remain those of the catalog in force at the time of matriculation unless the student specifically chooses those of a more recent catalog.

**Deadlines and Fees**

The Office of the Registrar will accept ‘Undergraduate Change of Major’ forms for processing up to the close of business on the first day of classes of each semester. Forms received after the first day of classes will be processed effective for the following semester.

All students are allowed to change majors twice in a given academic year at no charge. The academic year begins August 1st and is completed the last day of July each year.

If a student elects to change majors more than two times during an academic year, the third change requires a $25.00 fee. EXCEPTION: There is no charge to move to, or from, the "undeclared major" category.

**Declaring a Major**

Undergraduate students must declare an academic course of study or major by the time they have earned 54 semester credit hours in order to continue enrollment. These hours include UT Dallas credits, credit transferred from other institutions, and hours awarded through credit by examination (AP, CLEP, IB, SAT, etc.).

Transfer students who have earned 54 hours at the time they apply for admission to UT Dallas must declare a major at the time of admission.

Continuing students on academic probation who pass the 54 hour benchmark without declaring a major have a maximum of two long semesters to regain good academic standing. During this period students will remain undeclared. A student who fails to regain good standing within two long-semesters will be suspended from the University.
Military Service Activation Interruption of Education

From time to time, students who are reservists or members of the National Guard may be called to active duty in the U.S. military after a semester has begun. These students have several options for the treatment of their enrollment and tuition.

Option to Remain Enrolled and Complete Coursework Following Brief Military Service

Under certain circumstances, a student who is required to participate in active military service is excused from scheduled classes or other required activities and will be allowed to complete an assignment or exam within a reasonable time after the absence. The excused absence is permitted only if the student will miss no more than 25% of the total number of class meetings or the contact hour equivalent (not including the final examination period) for the specific course or courses in which the student is enrolled at the beginning of the period of active military service.

Option to Withdraw, Receive Incomplete Grade, or Receive Final Grade

A reservist or member of the National Guard called to active duty in the U.S. military who receives activation orders after the start of a semester has four other options for the treatment of tuition and fees paid to The University of Texas at Dallas and transcript notation. According to state statutes and Coordinating Board rules, the student may request any one of the following:

1. The Office of the Registrar will process the withdrawal of the student from all classes and record “Withdrawn-Called to Military Duty” (WM) on the student’s transcript and the Bursar Office shall refund the tuition and fees paid by the student for the semester in which the student withdraws; or
2. The Office of the Registrar may grant a student who is eligible under UT Dallas guidelines an incomplete grade (See “Incomplete Grades” section of the catalog for eligibility) in all courses by designating “Incomplete-Called to Military Duty” (XM) on the student’s transcript. Please note: XM grades must be resolved within one year from the “release from active duty” date on military orders; or
3. The student may petition the instructor to assign an appropriate final grade or credit for the course after successfully completing a substantial amount of course work and having demonstrated sufficient mastery of the course material; or
4. If the student withdraws before the Census Day of the semester in which the student is called to active military duty and the student requests Military Leave, courses will be dropped. Courses dropped on or before Census Day will not appear on the student’s transcript.

NOTE: There are no provisions for refunds for active duty service members who are deployed as a result of military orders or for individuals who choose to enter the service. The provisions listed above apply only to reservists or members of the National Guard called to active duty.

Option for Automatic Readmission Following Military Service

A reservist or member of the National Guard called to active duty (not including routine National Guard training) may be readmitted without application or payment of additional application fees within one year of the “release from active duty” date on military orders. Applicable students will retain academic standing and financial eligibility if they meet current eligibility requirements other than continuous enrollment or other timing requirements.

Registration

Students may participate in a course only after officially registering and paying through the proper procedures. The Office of the Registrar officially notifies an instructor of the names of the students enrolled in a course. Students will not receive credit for courses for which they are not registered.

Auditing a Class

(See the “Academic Policies and Procedures” section on page 24).
Concurrent Enrollment Tuition

A concurrent enrollment agreement is in place between The University of Texas at Dallas, The University of Texas at Arlington and The University of Texas Southwestern Medical Branch. This agreement allows any student enrolled concurrently between these institutions to receive a waiver of certain fees. Students must apply for concurrent enrollment with The Office of the Registrar.

In addition, Texas Education Code 54.011 states that when a student registers at more than one public institution of higher education at the same time, his tuition charges shall be determined in the following manner:

1. The student shall pay the full tuition charge to the first institution at which he is registered; and in any event he shall pay an amount at least equal to the minimum tuition specified in this code.
2. If the minimum tuition specified in this code for the first institution at which the student is registered is equal to or greater than the minimum tuition specified in this code for the second institution at which the student is registered concurrently, the student shall not be required to pay the specified minimum tuition charge to the second institution in addition to the tuition charge paid to the first institution, but shall pay only the hourly rates, as provided in this code, to the second institution.
3. If the minimum tuition specified in this code for the first institution at which the student is registered is less than the specified minimum tuition charge at the second institution (that is, if the second institution has a higher minimum tuition charge specified in this code), then the student shall first register at the institution having the lower minimum tuition and shall pay to the second institution only the amount equal to the difference between his total tuition charge at the second institution and his total tuition charge at the first institution, but in no case shall the student pay to the second institution less than the hourly rates as provided in this code.
4. If a student is considered to be a Texas resident and therefore qualified to pay Texas resident tuition rates by one institution at which he is registered, that student shall be considered a Texas resident at each of the institutions at which he is concurrently registered for the purposes of determining the proper tuition charges. Nothing in this subdivision shall be so construed as to allow a nonresident to pay resident tuition except at institutions covered by Section 54.060 of this code.

Dates for Registration

Registration dates are listed in the online Comet Calendar (http://www.utdallas.edu/calendar/). All dates for registration and late registration and all formal procedures for registration are listed in the online Class Schedule (http://www.utdallas.edu/student/registrar/lookup/) for each semester by The Office of the Registrar. New students will have an opportunity to register at orientation. All freshmen, undeclared, and transfer students are required to meet with their academic advisor prior to registering for classes.

Continuing and transfer students may register during the following registration time periods:
   Week 1: Degree-seeking graduate students and undergraduate seniors
   Week 2: Graduate students, undergraduate seniors, juniors and sophomores
   Week 3: Graduate students, undergraduate seniors, juniors, sophomores and freshmen
   Week 4: Graduate students, undergraduate seniors, juniors, sophomores, freshmen, and non-degree-seeking undergraduates.

Students should take advantage of early registration opportunities to ensure enrollment in the classes they select. Web registration (http://galaxy.utdallas.edu/) begins approximately one week after the Course Lookup goes live for the semester. Refer to the Comet Calendar and the online Academic Calendar for specific dates and procedures.

Dropping, Withdrawing, or Adding Courses

The University makes a distinction between **dropping** a class prior to the 12th class day (Census Day) which is not posted to the student’s permanent record, and **withdrawing** from a class (following Census Day) at which point the academic action becomes a part of the student’s transcript.

A student who enrolls in a Texas public institution as a first-time **freshman** in fall 2007 or later will not be allowed to withdraw from more than six courses over his or her entire undergraduate career as a result of a new Texas law. This
includes all classes taken at any Texas public institution of higher education. There are certain legislatively-mandated reasons for withdrawing from a class that do not count toward the six-class limit. These reasons include, among others, a severe illness or other debilitating condition that affects the student’s ability to complete the course; the student’s need to care for a sick, injured, or needy person if the care affects the student’s ability to complete the course; the death of the student’s family member or of a person considered to have a sufficiently close relationship to the student; the active duty service as a member of the Texas National Guard or the armed forces of the United States of the student, a family member, or a person considered to have a sufficiently close relationship to the student; or a change in the student’s work schedule that is beyond the control of the student and that affects the student’s ability to complete the course.

The University is developing an appeal process by which students can request exemption for a specific withdraw. Rules and regulations regarding this new law are currently being developed and will be published as they become available at http://www.utdallas.edu/registrar/.

As always, students may drop classes without penalty prior to the 12th class day (Census Day) in any semester.

Dates and time limits for dropping or adding courses are listed in the Comet Calendar (http://www.utdallas.edu/calendar/) and the online Academic Calendar.

Newly-admitted students to The University of Texas at Dallas wishing to add courses or register for courses must do so prior to the first day of classes.

Students who drop all courses in a given semester must officially withdraw from the University. (See “Withdrawal/Resignation from the University,” page 40).

Students who habitually drop a significant fraction of their schedules may lose the right to drop or may be dismissed from the University for failure to make adequate academic progress (See “Academic Progress,” page 24).

**Administrative Drop**

Students may be dropped from a course for which they have not satisfied the prerequisites.

**Deadlines for Adding or Dropping a Class**

NOTE: Students should retain copies of all add and drop forms for at least one year following the end of the semester in which the student initiates a drop or add course action.

Deadlines vary during the shorter summer sessions. It is the student’s responsibility to review the Comet Calendar (http://www.utdallas.edu/calendar/) or the online Academic Calendar for specific summer deadlines.

Deadlines for dropping a course are based upon the course and not the student. For example, when an undergraduate student takes a graduate course, the drop procedures for graduate courses take effect.

**Add**

Beginning the first (1st) day of class through the sixth (6th) class day, students may add a class on-line without the instructor’s or advisor’s signature. However, students in the following categories must still meet with an academic advisor before adding classes:

- Students newly admitted to The University of Texas at Dallas (including transfer students and freshmen),
- Students without declared majors and those students who are not in good academic standing. Please see the Comet Calendar’s (http://www.utdallas.edu/calendar/) academic section for specific deadlines.
Drop

Courses dropped on or before Census Day will not appear on the student’s transcript.

After Census Day, permissions to drop are required from the school or college in which the student is admitted.

W Period

Through the fourth class week of a long semester, students may withdraw from courses by completing a drop form and having it signed by their academic advisor and course instructor. A grade of “W” (withdrawn from course) will appear on the student’s transcript.

WP/WF Period

During the fifth (5th) through ninth (9th) class weeks of a long semester, students who submit a completed drop form will receive a grade of “WP” (withdrawn passing) or “WF” (withdrawn failing) as determined and assigned by the course instructor. The student must obtain the instructor’s and advisor’s signatures on the form. If a grade of “WP” or “WF” is not recorded by the instructor on the drop form, then the default grade of “WF” will be assigned.

After the ninth (9th) class week of a long semester, a student may only withdraw from a class for non-academic reasons.

Drop Appeal Procedures

Students who believe they have dropped a course, but receive a grade for that course at the end of the semester, have one calendar year in which to provide documented proof of the processed drop to the Dean of Undergraduate Education to appeal the posted grade.

Non-academic Drops

To drop a course for non-academic reasons, students must complete a written petition detailing the nature of the request and include supporting documentation. Non-academic drop petitions are to be obtained from the Undergraduate Student Advising Office (JO 4.800). The Director of Undergraduate Advising will distribute the petition to a committee whose members will independently review the petition and either approve or deny the request to drop. The Director will inform the student of the outcome.

NOTE: It is extremely important that students petitioning to drop a class for non-academic reasons continue to attend and perform in the class if possible, until the petition request is resolved. If the petition is approved, the student will receive a grade of “W” for the course. Otherwise the student will receive the grade earned in the course.

Non-academic drop petitions may be submitted at anytime during the semester.

Readmission of Former UT Dallas Students

(See page 21).

Visiting U.T. System Students Program

The Visiting U.T. System Students Program is designed to allow upper-level and graduate or professional students enrolled in an institution of the UT System to take courses or engage in research at another institution within the UT System during a regular semester or summer session. Each campus must appoint an individual designated to coordinate the visiting student program at both the home and host institution. Every campus has the responsibility to
determine the academic qualifications necessary for their students to participate in the visiting program. Approval of a student’s proposed visitation will be contingent on space and desired courses being readily available in the proposed visitation program and, for participation in a research laboratory, on approval of the director of the laboratory (Regent’s Rules 50701).

Withdrawal/Resignation from the University

A student who wishes to withdraw entirely from the University must submit a completed Registration, Drop/Add and Withdrawal Form (http://www.utdallas.edu/student/registrar/forms) to The Office of the Registrar. Students must withdraw on or before the last WP/WF withdrawal day for that semester.

Religious Holy Days

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment.

The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

Repeating Course Work

An undergraduate student is limited to three grade-bearing enrollment attempts for any specific class. An enrollment is considered grade bearing if a student receives a distributed grade (i.e. A through F) or a mark of ‘W’, ‘WP’, ‘WF’, ‘NC’ or ‘CR’. A student attempting the same class for the third time will be charged a penalty fee equivalent to the out-of-state tuition for the same number of semester credit hours. Courses cross-listed under more than one course prefix are considered the same course.

The grade from the first attempt will not be used in computing a student’s grade point average. All further repeats will be used in computing the student’s cumulative grade point average. (See also “Grade Point Average,” page 29 and “Transfer Credit,” page 45 for more detail). The grade from the last attempt will determine credit earned to satisfy degree requirements.

Regardless of the number of times a course is repeated, any single course can contribute only once to the number of hours required for graduation. A limited number of courses, such as independent study courses, may be repeated for credit. Students should contact their academic advisor to determine the application of such course credit toward graduation. When a student repeats a course at UT Dallas, the student is responsible for submitting a completed ‘Repeated Course Adjustment Form’ to The Office of the Registrar in order to initiate the change on the student’s permanent record. With the permission of the instructor, a student may audit a course which has previously been taken for credit.

All grades will appear on the student’s transcript. A notation beside the first grade will indicate that the course has been repeated. Courses that were originally taken for a letter grade may not be repeated for Credit/No Credit in lieu of a letter grade.

NOTE: Students who are Texas residents should be aware that state law limits the number of semester credit hours an undergraduate Texas resident may attempt while paying tuition at the rate provided for Texas residents. See the section on “Excessive Undergraduate Hours” on page 48.
Courses transferred for credit to UT Dallas from another accredited college or university may not be repeated for additional credit.

Students who fail a course in residence at UT Dallas may repeat the course at another accredited college or university. Upon completion of the course with a grade of at least ‘C’ (2.00 on a 4.00 scale), the class may be transferred to UT Dallas where it will meet the content requirements of the course failed in residence and contribute hours toward graduation. However, the grade of ‘F’ earned at UT Dallas will remain a part of the student’s academic record and will be computed as a part of the cumulative grade point average (GPA).

**Scholastic Probation**

All students who show a cumulative grade point deficiency, defined as a cumulative University of Texas at Dallas grade point average (GPA) below a ‘C’ or 2.00 on a 4.00 scale, are placed on scholastic probation automatically by notation of such status on their academic record. The Associate Dean of Undergraduate Education may also place a student on probation who fails to maintain at least a 2.00 GPA in the major and related courses, independent of the overall GPA.

Students on scholastic probation must meet with an academic advisor prior to registration. Such students may not register for more than 12 semester credit hours, must earn a 2.00 GPA each semester while on probation, and may not drop or withdraw from classes. Violation of these requirements may lead to the student’s suspension from the University.

Grade point deficiencies incurred at UT Dallas must be removed through additional course work at UT Dallas. Grade points earned at other institutions are not used in computing the GPA and may not be used to remove a grade point deficiency.

Students who leave the University on scholastic probation will be readmitted on scholastic probation, even if they have attended another institution in the interim. If a student withdraws from the University while on scholastic probation, and if this action results in an additional grade point deficiency, the student has failed to meet the minimum requirements for removal of scholastic probation and will be placed on scholastic suspension.

**Scholastic Suspension**

A student is automatically placed on scholastic suspension by the University for failure to meet the terms of scholastic probation. A student who is under scholastic suspension will be placed on hold and may not enroll in, audit, or visit a class unless readmitted as described below. Notice of this scholastic suspension will show on the student’s transcript.

Students in a major who are placed on scholastic suspension by the University for the first time may be readmitted only by permission of the Associate Dean of Undergraduate Education. Non-degree-seeking students and students with undeclared majors who are placed on suspension for the first time may be readmitted only by the permission of the Dean of Undergraduate Education. Students thus readmitted may be subject to additional probationary conditions placed upon them by the Associate Dean of Undergraduate Education.

A student who has been placed on scholastic suspension more than once or has a grade point deficiency of 30 grade points or more will be suspended from the University indefinitely and may be readmitted only by petition of the Associate Dean of Undergraduate Education to the Dean of Undergraduate Education. Students thus readmitted may be subject to additional probationary conditions placed upon them by the Associate Dean of Undergraduate Education, and/or by the Dean of Undergraduate Education.

A student who reenters the University after scholastic suspension will reenter on scholastic probation.

**NOTE:** If, following academic suspension, a student petitioning for re-admission also wishes to change majors, the student must complete the ‘Change of Major Form’ prior to petitioning for re-admission to the University (See “Change of Major,” page 35 for details.) If the Change of Major is approved the receiving Associate Dean will determine the validity of the re-admission petition.
Texas Higher Education Assessment/Texas Success Initiative (THEA/TSI)

Registration Requirements

The Texas Success Initiative (TSI) is a state mandate that requires students to be assessed in reading, writing and math skills prior to enrolling in college, and to be advised based on the results of that assessment (see http://www.thecd.state.tx.us/TSI/FAQ.htm). Each institution determines an individualized education plan to encourage academic success for those students who score below a deviation standard (or do not pass the THEA test). Students will be required to retest if they do not pass the initial test. Students who are non-degree seeking or non-certificate seeking must meet TSI standards.

UT Dallas uses the Texas Higher Education Assessment (THEA), formerly the TASP test, offered by Pearson (National) Evaluation Systems to measure student proficiency in the basic areas of study for fulfillment of the TSI requirement.

UT Dallas requires incoming students who are not TSI exempt to take the THEA test. The required passing standards on the THEA are:
- Reading – 230
- Math – 230
- Writing - 220

UT Dallas students must take the THEA or Quick THEA test to satisfy the test requirement. No other types of tests can substitute for the THEA test requirement unless a student is currently enrolled at another institution when he or she takes an alternative test.

Students may register to take the Quick THEA with Learning Resources, (972)883-6707

TSI Exemptions

The following students are TSI exempt, but are required to take the THEA as a placement test and meet the standards listed above prior to enrolling in any additional courses in the areas of reading, writing, and mathematics.*

1. Students who are non-degree seeking or non-certificate-seeking.
2. Students who have transferred to UT Dallas from an accredited private or independent institution of higher education having completed a traditional academic Associate’s of Arts or Sciences degree.
3. Students who have previously attended any Texas public institution and have been determined to have met readiness standards by that institution. (*The explanation for complete or exempt must be available on the student’s transcript.)
4. Students who are enrolled in a certificate program of one year or less at a Texas public junior college, public technical institute, or public state college.
5. Military Service:
   - Students who are serving as active duty members of the Armed Forces of the United States are TSI exempt. Official documentation of active duty status for the enrollment period is required. Students must file a Verification of Active Duty form each semester.
   - Students who are on active duty in the Texas National Guard are TSI exempt. A verification letter from the Unit Administrator is required each semester,
   - Students who are currently serving, and have for at least the last three years before enrollment served, as members of a reserve component of the armed forces are THEA exempt. A verification letter from the Unit Administrator is required each semester.
   - Students who on or after August 1, 1990, were honorably discharged, retired, or released from active duty as members of the Armed Forces of the United States, Texas National Guard, or of a reserve component of the Armed Forces of the United States are TSI exempt. A copy of the DD214 form showing this status is required.
   - Students who are transferring to The University of Texas at Dallas from a private or out-of-state, regionally accredited, college or university may meet sections of the Texas Success Initiative and the THEA placement test based on a grade of C or better in courses that are equivalent to the following courses at UT Dallas:

Reading
- (A) HIST 1301, 1302 (U.S. History);
- (B) ENGL 2321, 2322, 2323 (British Literature);
Academic Policies and Procedures

(C) ENGL 2331, 2332, 2333 (World Literature);
(D) ENGL 2326, 2327, 2328 (American Government);
(E) PSY 2301 (General Psychology); or
(F) GOVT 2301, 2302, 2305, 2306 (American Government)

Mathematics
(A) MATH 1300;
(B) MATH 1306;
(C) MATH 1314;
(D) MATH 1325;
(E) MATH 1326;
(F) MATH 2312 and courses in calculus.

Writing
(A) ENGL 1301 (Composition I/Rhetoric I); or
(B) ENGL 1302 (Composition II/Rhetoric II).

Students who have achieved the following standards are TSI exempt and are not required to take the THEA as a placement test prior to registration for courses at UT Dallas.

- **ACT** - Students with ACT composite score of 23 or higher, with individual math and English scores of no less than 19 are both TSI and THEA exempt. ACT scores can be no more than five years old.
- **SAT** – Students with SAT composite score of 1070 or higher, with 500 verbal and 500 math, are TSI/THEA exempt. SAT scores can be no more than five years old. Residual SAT cannot be used for THEA exemption.
- **New SAT** - Students with SAT composite score of 1605 or higher, with 500 critical reading, 500 math and 500 writing sample score are TSI exempt. SAT scores can be no more than five years old.
- **TAAS** - Students with exit-level TAAS scores of 1770 or higher on writing, TLI of 89 in reading, and TLI of 86 in math are TSI exempt. TAAS scores can be no more than three years old. (The exit-level TAAS is a test given in Texas Public High Schools).
- **TAKS** - Students with EXIT TAKS scores of 2200 in English Language Arts and Math as well as a score of 3 in the writing sample (which is often not printed on your high school transcript, but can be found on the Exit level TAKS score report) are TSI exempt. TAKS scores can be no more than three years old.
- Students who have a bachelor’s degree from an accredited institution in the United States.

The following alternative tests may be used to satisfy UT Dallas’s TSI requirements, but only if taken while registered at the school where the alternative test is taken. Furthermore, please be aware that the THEA writing requirement is fulfilled by meeting the minimum score requirements on both the writing and essay sections of the tests below:

- **ASSET** – Students with the following minimum scores are TSI/THEA exempt. Reading: 41, Math: 38, Writing: 40/ Essay: 6
- **COMPASS** – Students with the following minimum scores are TSI/THEA exempt. Reading: 81, Math: 39, Writing: 59/ Essay: 6
- **ACCUPLACER** – Students with the following minimum scores are TSI/THEA exempt. Reading: 78, Math: 63, Writing: 80/Essay: 6
- **MAPS** – Students with the following minimum scores are TSI/THEA exempt. Reading: 29, Math: 22, Writing: 21/ Essay: 6. MAPS scores are acceptable only if taken prior to 9/1/2003.

Note: Transcripts should be submitted to UT Dallas as soon as possible. Official evaluation must be completed to determine course equivalencies before a TSI waiver will be granted.

The Learning Resources Unit of Undergraduate Education provides Developmental Education for the UT Dallas campus. When undergraduate students are first admitted at UT Dallas, they are immediately TSI liable. If they are not previously either TSI exempt or TSI waived, undergraduate students must take the Quick THEA or the THEA examination prior to the beginning of their first semester at UT Dallas. UT Dallas does not accept alternative tests for TSI purposes unless a student accumulates collegiate-level course work during the same semester at the same public institution where the student took an alternative test.
Enrollment into Developmental Education

Students who are required to take the TSI/THEA and do not successfully pass all three sections at the level of the previously stated standards will be required to register for Developmental Education courses for all areas in which they did not achieve the stated standard. Their enrollment in Developmental Education on The University of Texas at Dallas campus is required during the first semester that they attend U.T. Dallas. If at any time during the semester an audit reports a student in violation of this policy, that student will be immediately transferred into the appropriate Developmental Education course and dropped from a collegiate level course that is in the same content area. UT Dallas students must take their Developmental Education on the UT Dallas campus.

Placement into Developmental Education Courses

Developmental Education coursework is designed to build upon existing skills in order to facilitate student success in the core curriculum at U.T. Dallas. The Developmental Education courses that are offered are as follows:

- DMTH OV93 Fundamentals of Math and Elementary Algebra
- DRDG OV92 Reading for Success
- DWTG OV91 Writing for Success

Students are required to remain in Developmental Education until they pass the THEA examination in the particular content area in which they had previously failed. If students do not pass the THEA examination after one semester of developmental coursework, they re-enroll in the same course, but their assignments are individualized to avoid redundancy. Students are not permitted to enter college-level courses without evidence that they possess the basic skills necessary to have a reasonable chance of success; thus, students are not permitted to be enrolled in "college-level and developmental work in the same content area simultaneously."

Participation and Attendance in Developmental Education

Students who are required to enroll in Developmental Education because they have failed one or more parts of the THEA examination are subject to the following policies.

Students sign a contract that states that they understand class attendance is mandatory and if they are absent and do not follow the procedure in the contract, they will be withdrawn from The University of Texas at Dallas for the semester with no refund.

Students are advised when they are in jeopardy of being withdrawn; an attempt is also made to contact their advisor. The Director of Learning Resources reports those students who are not in compliance to the Registrar, and the Registrar sends a letter to any student who is withdrawn. A copy of the letter is sent to the Dean of Undergraduate Education. Students who are required to be in Developmental Education for TSI/THEA purposes may not drop a developmental course unless they pass the THEA examination or they are withdrawing from all University courses for the semester. All drop forms are to be signed by the TSI Liaison Officer.

Completing Required Developmental Education

In order to complete successfully any required Developmental Education course, students must comply with the mandatory attendance policy, complete assignments, quizzes, and tests with an overall minimum average of 70% in the course or courses in which they are enrolled. Students are then required to re-take the THEA examination. If they fail any part of the THEA examination, students are required to re-enroll in Developmental Education coursework in all content areas of the THEA they have not passed.

Provisions for Transferring Students

Students transferring to The University of Texas at Dallas from private or out-of-state institutions must meet TSI requirements (be tested or exempted) prior to being allowed to enroll in any collegiate-level work. Students who transfer with 60 or more accumulated semester credit hours or the equivalent to UT Dallas from an American private or out-of-state U.S. institution may use transferred courses which are given common course numbers corresponding to courses approved by UT Dallas to satisfy TSI requirements. Students must have earned a course grade of "C" (2.00 on a 4.00 scale) or higher in each of the three skill areas. If not, the student must be tested for the remaining skill areas and must comply with all other TSI requirements.
Students transferring from other public institutions of higher education in the State of Texas must be TSI exempted/complete* or comply with the UT Dallas policies for Developmental Education set forth in this document.

NOTE: Once any student accumulates 60 hours of collegiate-level coursework, he or she may not enroll in any upper division courses until all three areas of the TSI and UT Dallas’ THEA standards have either been exempted or achieved.

The specific application for the Texas Success Initiative as outlined in this statement applies to UT Dallas students only.

**TSI**: The Texas Success Initiative (formerly TASP) is a state-legislated program designed to improve student success in college. There are two components of the program:
1. an assessment to diagnose students’ basic skills in reading, mathematics, and writing; and
2. developmental instruction, to strengthen academic skills that need improvement.

**THEA**: Texas Higher Education Assessment.

**Transfer Credit**

Although UT Dallas normally accepts credit from academic courses taken at other regionally accredited institutions in which a grade of C (2.00 on a 4.00 scale) or higher has been earned, specific course and degree requirements must be met in order for these courses to be included in the student’s degree plan.

The Office of Enrollment Services evaluates an applicant’s completed file to determine which credits earned at another college or university will transfer to UT Dallas. Once admitted the student’s record will be articulated for all transfer work and reflect which credits have been accepted by UT Dallas. An undergraduate advisor in the student’s major, in consultation with the Associate Dean for Undergraduate Education, will determine how the transfer credits apply to UT Dallas degree requirements. The faculty, acting through the Associate Dean of Undergraduate Education, has the ultimate responsibility for applying transfer credit to their specific major requirements. Students may request an articulation appeal through the Associate Dean of Undergraduate Education in their school.

Students may not transfer to UT Dallas more than six of the final thirty (30) hours required for their degree.

To ensure that credit earned elsewhere will be accepted, continuing UT Dallas students who wish to take courses elsewhere must complete an ‘Off Campus Transfer Work Approval Form’ in their advising office prior to registering for the course(s). Upon completion of approved courses an official transcript must be sent electronically or by mail to:

Office of the Registrar MC 11
The University of Texas at Dallas
800 W. Campbell Road
Richardson, Texas  75080-3021.

**Military Training Awarded as Academic Course Credit**

The University of Texas at Dallas will consider whether to award lower-division (1000 or 2000 level) academic course credit toward a degree to admitted students when a student has completed and provided all of the following documentation to the Registrar’s Office (see address above):
1. an official military record presented to the institution by the student that describes the substance of the training completed by the student and verifies the student’s successful completion of that training,
2. a detailed description of the course of instruction,
3. all required texts and authors,
4. any method of evaluation and,
5. the course syllabus or training manuals.

All documentation must be submitted to the Office of the Registrar by Census Day (12th class day in the long semesters) of the first semester admitted. All requests for academic credit will be reviewed by the appropriate discipline using established university transfer credit policies. Notification to the student by the Registrar of approved credit will occur prior to registration for the following semester. All decisions are final.
Transcripts

Students may obtain their official UT Dallas transcript from The Office of the Registrar at no charge if they pick up the transcript in person or if the transcript is sent via regular postal mail. Fees for overnight and international mail, however, will apply. A student must clear all University holds before requesting an official transcript.

No partial or incomplete transcripts will be issued. Transcript requests are not accepted over the telephone.

Transcripts may be ordered for pick-up in person in The Office of the Registrar. Alternatively, transcripts to be mailed may be ordered:

- Online using the Online Transcript Request Form, which is available at https://www.utdallas.edu/student/registrar/ for use under certain conditions
- By fax at (972)883-6335 with the student’s signature
- By email sent from the student’s UT Dallas email account (or from the email of record, if alumni) to transcripts@utdallas.edu
- By mail with student’s signature. The mailing address is:
  
  Office of the Registrar, MC 11
  The University of Texas at Dallas
  P.O. Box 830688
  Richardson, TX 75083-0688

Transcripts requested by email will only be mailed to a student at the address on file with The Office of the Registrar or to another university.

The Texas Education Code provides legal penalties for any alteration of academic records or transcripts with the intent to use such a document fraudulently or permit the fraudulent use of such a document. Falsifying or omitting information may result in withdrawal of any offer of admission, in cancellation of enrollment, and/or in disciplinary action.
Tuition and Financial Aid

As a state-supported institution of higher education, The University of Texas at Dallas is required to comply with all state laws in the assessment and collection of tuition, fees, and deposits. The tuition, fees, and deposits listed herein are subject to change by state law. Pursuant to Chapter 54, *Texas Education Code*, each student who registers is required to pay tuition and fees appropriate to the student’s residence classification and according to the number of semester hours for which he or she has registered. It is the student’s responsibility to establish, prior to registration, the correct residence classification through the Office of the Registrar. Likewise, any student wishing to request a change of residence status for tuition purposes should do so through the Office of the Registrar. This will require completion of a residence questionnaire and the provision of documents to support the claim of Texas residency. Rules and regulations for determining residency, or for obtaining a waiver to pay resident tuition even if one is a non-resident, are found in Appendix III of this catalog. Final authority of appeal for review of residence decisions rests with the Office of the Registrar.

In accordance with state laws, students are not entitled to enter a class or laboratory until they have registered and all tuition, fees, and deposits have been paid. The University cannot accept personal checks for amounts in excess of the total registration cost.

The University of Texas at Dallas utilizes a consolidated tuition rate, which is capped at 15 semester credit hours for resident students. The consolidated tuition and fee rates cover all academic program costs; including tuition, mandatory fees, and most of the college and course incidental fees. Additional fees that will be charged separately are: field trip fees, supplemental designated tuition fees and distance education fees.

There are other fees, which may be required depending on classes taken and services used. (See “Other User Fees for Courses and Services” beginning on page 50.)

Beginning fall 2007, The University of Texas at Dallas introduced the Guaranteed Tuition Plan. The Guaranteed Tuition Plan is designed to help new students and their families better plan for the cost of a college education, while allowing the University to maintain the quality of its academic programs. Under the terms of the plan, undergraduate students enrolling at UT Dallas for the first time for the fall 2007, spring 2008 and summer 2008 semesters will be charged for tuition and mandatory fees fixed at the fall 2007 rates for all succeeding semesters through the summer of 2011. The cohort of new students who enroll at UT Dallas in the 2008-09 academic year will pay tuition and mandatory fees at a new rate which will also be guaranteed for the following four years. The charges per semester credit hour for tuition and mandatory fees at UT Dallas will depend on the number of hours for which a student enrolls. Other non-mandatory fees including, for example, parking, and housing fees, will be subject to change. More information on the Guaranteed Tuition Plan can be found at http://www.utdallas.edu/tuition/guarantee/.

Students who enrolled at UT Dallas prior to fall 2007 will be charged a different rate than the newly enrolled students. That rate remains subject to increase each year. The Guaranteed Tuition program is open to currently enrolled students but, unless a student has more than two full years of instructional work left to complete, the benefit of joining the program would be very limited, if any.

Those who begin their college careers at a community college will also be able to take advantage of UT Dallas’ Guaranteed Tuition Plan under a new program called the Comet Connection. Students enrolling at participating two-year schools in the 2007-08 academic year can lock in the same fall 2007 rate for new students for the same four-year period as students who begin at UT Dallas. Students may contact UT Dallas’ Comet One-Stop office at (972)883-2270, or go to http://www.utdallas.edu/connect/ for more information.

Students are not registered or eligible to attend classes until they have paid in full or signed payment arrangements with the Bursar for all tuition and fees. Students who do not pay a minimum of 50% of all tuition and fees by the payment deadline of the applicable semester’s class schedule may have their registration canceled. If a student’s registration has been canceled for nonpayment, and that student wishes to reinstate registration, a reinstatement fee in addition to any late fees and tuition and fees will be charged. See the online fee schedules at http://finance.utdallas.edu/bursar/schedule-introduction.html for fees associated with course reinstatement. No student will be reinstated in a closed course.

Students who have not completed the payment of all tuition and fees by the end of the semester will be subject to one or more of the following actions at the University’s option: bar against readmission at this institution; withholding of grades, degree, and official transcript; and all penalties and actions authorized by law.
Students may refer to the Academic Calendar at http://www.utdallas.edu/student/registrar/calendar/ or the Tuition and Fees Schedule at http://finance.utdallas.edu/bursar/schedule-introduction.html for information regarding payment and refund deadlines.

**Excessive Undergraduate Hours**

Section 54.014, *Texas Education Code*, establishes a maximum number of semester credit hours that an undergraduate Texas resident may attempt while paying tuition at the rate provided for Texas residents. Attempted hours include all hours taken at a Texas state institution of higher education for which a student was registered as of Census Day, including, but not limited to, courses that have been repeated, failed, and courses from which the student withdrew. A student who exceeds the maximum hours may be charged tuition at a rate higher than the rate charged to other resident undergraduate students, but the rate may not exceed the rate charged to nonresident undergraduate students and applies only to the excess hours. Students already holding one baccalaureate degree are exempt when enrolled in a second baccalaureate degree program.

For undergraduate resident students enrolling for the first time in fall 1999 through summer 2006, the maximum is **45 hours** above the MINIMUM number of hours required for completion of the degree program in which the student is enrolled, or 120 hours for a student who is not enrolled in a degree program.

For undergraduate resident students enrolling for the first time in fall 2006, the maximum is **30 hours** above the MINIMUM number of hours required for completion of the degree program in which the student is enrolled, or 120 hours for a student who is not enrolled in a degree program.

*Texas Education Code*, §54.068, provides that institutions may charge a higher rate of tuition to students with repeated or excess hours. Undergraduate students attempting a course, or a substantively identical course, more than two times will be charged at a rate higher than their current tuition rate.

**Freshman Exemption**

The highest-ranking graduate of any accredited high school in Texas is entitled to a tuition exemption. The exemption pays tuition for a period of two long semesters of academic work. Eligible students must present the Texas Education Agency eligibility certificate or a letter from the student’s high school principal or superintendent, to the Office of the Registrar in order to claim the exemption.

**General Property Deposit**

Every student must make a general property deposit of $10.00. This deposit is subject to charges for property loss, damage or breakage, or violation of rules in any University library or laboratory; for failure to return keys furnished by the University; or for damage to, or loss of, any other University property. Students having charges in excess of the deposit must pay the excess immediately upon notice. Pending payment, the student will be subject to a bar against readmission; withholding of grades, degree, and official transcript; and all penalties and actions authorized by law.

This deposit, less any outstanding balances on the student’s account, will be returned upon written request at the end of the student’s career at The University of Texas at Dallas. A general property deposit that remains without call for refund for a period of four years from the date of last attendance at the University shall be forfeited, and the deposit shall become part of the Student Property Deposit Scholarship Fund.

**Installment Payments**

Students may elect to pay tuition and fees for the full term fall, spring, and twelve week summer semesters under the installment payment plan (Section 54.007, *Texas Education Code*). A $25.00 fee per semester will be assessed each student who elects to pay by installments. Additionally, a late payment fee of $30.00 for delinquent payment will be assessed each time an installment is not paid by the date it is due. In the event of non-payment, the total amount due shall accrue interest from the third payment deadline at the rate of ten percent (10%) per year until the note is paid in full.
Nonpayment of Debt
A student who fails to provide full payment of loans, tuition, and fees, including late fees assessed, to the University when the payments are due is subject to one or more of the following actions at the University’s option:
1. Classes may be cancelled;
2. Bar against registration and/or readmission to the institution;
3. Withholding of grades, diploma, and official transcript; and
4. All penalties and collection actions authorized by law.

Partial Tuition and Fee Exemptions
As a state-sponsored institution of higher education in Texas, The University of Texas at Dallas is authorized to award partial tuition and/or fee exemptions to students who qualify. Exemptions are available to certain students who have been in foster or other residential care in the State of Texas, certain students who received Aid for Dependent Children benefits during their last year of high school, certain students who are suffering economic hardship, Texas residents who graduated from a public high school within 36 months of original enrollment and completed all years of high school in Texas, certain residents of Texas who served in the armed forces of the United States, Texas residents classified by the U.S. Department of Defense as prisoners of war on or after January 1, 1999, children of POWs/MIAs, students from other nations of the western hemisphere, blind or deaf students, military personnel and dependents, children of disabled/deceased firefighters and peace officers, firefighters enrolled in Fire Science classes, children of Texas veterans, children of professional nursing faculty, preceptors for professional nursing education programs, surviving spouses and minor children of certain police, security or emergency personnel killed in the line of duty, and certified educational aides. Senior citizens who are age 65 or older as of Census Day may be exempted from tuition for up to six semester credit hours each semester or summer term if space is available. Individuals who feel they may qualify under this section are requested to contact the Financial Aid Office at (972) 883-2941.

Rebate of Tuition for Timely Graduation
If you were a freshman who entered a Texas public college or university for the first time in the fall of 1997 or later, you may qualify for a $1,000 tuition rebate after you graduate. You must have been a resident of Texas, taken all your coursework at a Texas public institution of higher education, and been entitled to pay in-state tuition at all times while you were pursuing your degree. The law provides for the rebate if you graduate within three or fewer attempted hours of the number of hours required for your degree. For example, if your degree requires that you have 120 hours to graduate and you ultimately graduate with 123 attempted hours or fewer, you can qualify for the rebate. Attempted hours include every course for which you have registered, as of Census Day, for every semester, to include: developmental courses, courses you repeat, courses from which you withdraw, and credit you may receive by examination. Students must apply for the rebate in the Office of the Registrar at the beginning of the semester in which they apply for graduation. By law, refunds for students with outstanding student loans will be sent directly to the lender.

Refund of Tuition and Fees
Upon notification from the Office of the Registrar of official withdrawal, the Bursar Office shall refund tuition and fees (unless otherwise noted) in accordance with the following schedule:

For the Long Term (fall and spring semesters) and twelve-week summer session
- Prior to the first class day of a given semester, 100 percent
- During the first five class days, 80 percent of the applicable portion of the tuition and applicable fees
- During the second five class days, 70 percent
- During the third five class days, 50 percent
- During the fourth five class days, 25 percent
- After the fourth five class days, nothing

For the 6- and 8-Week summer sessions
- Prior to the first class day of a given term, 100 percent
- During the first, second, and third class day, 80 percent
- During the fourth, fifth, and sixth class day, 50 percent
- Seventh class day and thereafter, nothing
Separate withdrawal refund schedules may be established for other fees and charges. Refer to the “Other User Fees for Courses and Services” section, page 50, for refund information.

Cash refunds will not be made to students who request refunds; instead, refund checks will be available at the Bursar Office three business days after the refund is requested unless the student has opted for direct deposit. Direct deposit refunds are normally available 5 to 6 business days from the date they were requested. Refunds which are not picked up will be mailed to the local address on file approximately four weeks after the day the refund was requested.

A student who registers before receiving grades from the previous semester, and who is required to withdraw because of failure in the work of the previous semester, will have all fees for the current semester refunded.

No refunds will be granted unless application is made within one year after official withdrawal.

All 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 are in compliance with the Texas Education Code, Section 54.006 (http://tlo2.tlc.state.tx.us/statutes/ed.toc.htm) of the Texas 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.

**Title IV Programs – Refunding for Students**

As an institution participating in programs under Title IV of the Higher Education Act of 1965 as amended (“Act”), The University of Texas at Dallas 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, a 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. Section 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 sixty percent of the period of enrollment for which the charges were assessed. A student who withdraws prior to 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 Section 54.006, Texas Education Code, or a pro rata refund calculated pursuant to Section 484B of the Act, reduced by the amount of any unpaid charges and a reasonable administrative fee not to exceed the lesser of five percent of the tuition, fees, room and board, and other charges that were assessed for the enrollment period, or one hundred dollars. If the student charges were paid by Title IV funds, a portion or all of the refund will be returned to these programs.

**Tuition Tables**

Tuition and fees are subject to change by legislative action. Changes in tuition or fees will be effective upon date of enactment and will be reflected in fees and tuition charged. Specific tuition and fees for each term can be found at http://finance.utdallas.edu/bursar/schedule-introduction.html. Please note that the Texas Legislature does not set the specific amount for any particular student fee. The student fees assessed above are authorized by the state statute; however, the specific fee amounts and the determination to increase fees are made by the University administration and The University of Texas System Board of Regents.

Students taking courses in the School of Behavioral and Brain Sciences may be required to purchase professional liability insurance if they are in certain clinical experiences.

**Other User Fees for Courses and Services**

Students should note that, with the exception of the Application and Utility fee, all students will not pay all of the fees listed below. The tuition, fees, and deposits listed herein are subject to change by state law. Specific tuition and fees for each item can be found at http://finance.utdallas.edu/bursar/schedule-introduction.html

**Application Fee:** A nonrefundable application fee of $50.00, is required of all students applying for admission to The University of Texas at Dallas during the regular application period. If you submit your application after the application deadline but prior to the documentation deadline, the application fee is $125.00 in order to process your application for a decision in time to register for classes. An additional $50.00 international document evaluation fee is required for those who have
educational documents from countries other than the United States. Please refer to the Enrollment Services website for application deadlines.

**Audit Fee:** Students at The University of Texas at Dallas may, with the approval of the instructor and of the Office of the Registrar, audit courses. Auditing grants only the privilege of hearing and observing and does not grant credit. When approval has been granted, the applicant pays a fee of $100.00 per course. A student may withdraw from an audit course, but the fee will not be refunded. Persons 65 or over are permitted to audit without paying a fee. They must, however, qualify otherwise (see “Auditing Courses,” page 24), complete the audit form, and have the consent of the instructor. Audit registration is permitted only during the late registration period of each semester or term.

**Change of Major Fee:** There is a $50.00 fee for students changing majors more than two times in an academic year. (See “Change of Major,” page 35).

**Comet Camp Fee:** A $100.00 per student fee is required to defray the costs of materials, food, and field trip for freshmen who attend Comet Camp.

**Curricular Practical Training Fee:** A $100.00 per semester fee to assist in funding the administrative and clerical expenses required to review records and process the forms required by the Immigration and Naturalization Service to certify international students for placement in a practical training assignment.

**Diploma Replacement or Duplicate Fee:** A $10.00 fee is required to defray costs of preparing replacement or duplicate diplomas. An additional $25.00 will be charged to mail a diploma to a foreign address.

**Distance Learning Fee:** A fee per semester credit hour (SCH) to enroll in distance education courses offered over the Internet. Resident and non-resident students taking courses offered by the School of Management are charged $80.00 per semester credit. Students enrolled in courses offered through the U.T. Telecampus by the School of Engineering and Computer Science are assessed $50.00 per semester credit hour. Students enrolled in Teacher Education Telecampus courses will be charged $25.00 per semester credit hour.

**Field Trip Fee:** This fee is assessed to cover the costs of transportation, food, and/or lodging associated with a field trip. The amount of the fee varies depending on the destination and duration of the field trip. Every effort will be made to advise students of the field trip costs associated with a particular course at the time of registration, and the appropriate fee will be assessed at that time. Refund provisions do not apply to this fee.

**Health Insurance Fee:** A variable fee to pay the premium for the approved UT Dallas student health insurance plan is required for international students holding nonimmigrant visas. (See page 62, “Health Services”.)

**In Absentia Fee:** A student who registers in absentia shall pay a nonrefundable/nontransferable registration fee of $100.00 (see definition of in absentia, page 33).

**Installment Payment Plan Fee:** A $25.00 fee to cover the costs of providing a payment option for students in full term fall or spring semester courses. The plan is also available for student’s enrolled in the 12-week summer semester.

**Installment Plan Late Fee:** A late payment fee of $30.00 for delinquent payment will be assessed if the second or third tuition installment is not paid by the date it is due. In the event of non-payment, the total amount due shall accrue interest from the third payment deadline at the rate of ten percent (10%) per year until the note is paid in full.

**Institutional Loan Delinquency Fee:** A late charge of $30.00 per month ($90.00 maximum per note) will be assessed to students who do not repay their loans in accordance with the terms of the note.

**International Student Special Services Fee:** A $100.00 per semester fee for on-going review and certification of students with I-94 status in accord with federal regulations.

**Late Course Add Fee:** A $100.00 per course fee is assessed when a registered student adds a course after Census Day.
Late Graduation Fee: A $100.00 non-refundable, non-transferable fee is assessed when an approved application for graduation is received after the deadline.

Late Registration/Late Payment Fee: A nonrefundable charge of $100.00 with additional increments of $50.00 based on the number of days past the regular registration/payment deadline is required to defray costs associated with extending registration times.

Library Fines and Charges: Fines and fees for overdue library items are as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Fine Rate</th>
<th>Maximum Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Stacks</td>
<td>$0.50/day</td>
<td>$30.00</td>
</tr>
<tr>
<td>Recalled Items</td>
<td>$1.00/day</td>
<td>$50.00</td>
</tr>
<tr>
<td>Reserves/Media Reserves</td>
<td>$0.10/day</td>
<td>$50.00</td>
</tr>
<tr>
<td>Media</td>
<td>$1.00/day</td>
<td>$7.00</td>
</tr>
<tr>
<td>Information Commons</td>
<td>$0.10/minute</td>
<td>$50.00</td>
</tr>
<tr>
<td>Laptop</td>
<td>$0.10/minute</td>
<td>$50.00</td>
</tr>
<tr>
<td>Lost Items</td>
<td>* replacement cost of the item, a $25.00 processing fee, and any overdue fines</td>
<td></td>
</tr>
</tbody>
</table>

Library fines and charges can be obtained at the McDermott Library Circulation/Reserve Desk. Individuals who fail to return overdue library materials may be subject to criminal action for theft.

Orientation Fees: An optional fee is assessed for orientations conducted by Student Life.

Freshman Orientation held before the start of the Fall semester is $100.00. Transfer students or freshmen beginning in the spring or summer semester may attend an orientation for $25.00.

International students must attend an orientation conducted by Student Life and will be assessed a one-time fee of $50.00.

Parking Fees: A parking decal is required to park any motorized vehicle on campus. Any vehicle parked on campus that does not display a current parking decal will be subject to a parking citation. Decal fees may be found on the terms other fees schedule at http://finance.utdallas.edu/bursar/schedule-introduction.html. Students may purchase the following decals at the Bursar Office:

- Green: Allows students to park in campus green spaces.
- Gold: Allows students to park in campus gold or green spaces.
- Evening Orange: Allows students to park in orange marked spaces after 5pm or gold and green spaces anytime.

Waterview parking – A parking decal is required for all residents of the Waterview apartments. The following options are available:

- Full year Waterview Only: Allows students to park in Waterview parking ONLY.
- Waterview Green: Allows students to park in Waterview parking or in green campus spaces.
- Waterview Gold: students to park in Waterview parking or in campus gold or green spaces.

Note: Only one decal may be sold per student residing in the Waterview Apartments.

Parking decals are refundable on a prorated basis with the exception of the Waterview Only decal.

The Dallas Area Rapid Transit System (DART) provides bus service to the campus from the Richardson transfer terminal. Contact DART for schedule information. Students are eligible for a free transit pass from DART which is available through the Info Depot, located on the second floor of the Student Union.

Recreational Sports Course Fees: A $25.00 per course fee will be assessed for each physical instruction course taken.

Recreational Sports Locker Rental Fee: An optional locker rental fee of $5.00 - $15.00 per semester.

Recreational Sports Towel Service Fee: An optional towel service of $10.00 per semester.
Reinstatement Fee (Prior to Census Day): After the payment deadline for each semester, all registration for which tuition and fee payments have not been received may be canceled. If a student requests that the courses be reinstated before Census Day, a $25.00 reinstatement fee will be charged in addition to the graduated late registration fee. No student will be reinstated into a class that has been closed.

Reinstatement Fee (After Census Day): A $300.00 fee will be charged, in addition to tuition and required fees, to enroll a student after Census Day.

Returned Check Fee: Students will be assessed a $25.00 fee for each returned check unless their bank provides written notification it was at fault. Students who write bad checks to the University for tuition and fees will have their registration canceled unless full payment is made by the census day listed in the Academic Calendar.

Student Documents/Records Fee: Students may obtain a copy of any document in their file by making a written request to the Office of the Registrar and paying a charge of $5.00 per document copy at the Bursar’s Office; processing of these requests for copies will generally take four to five working days. Students should be aware, however, that transcripts of other schools received by the University are used as working documents, frequently carry written marks and notations, and may not be considered viable transcripts by other agencies.

Student Identification Card Replacement Fee: A $25.00 fee is required to defray the costs of reissuing a student ID card.

Student Life Co-Curricular Activities Transcript Fee: A $10.00 per registrant fee to cover partially the costs of producing transcripts listing students’ activities.

Student Teaching Supervisory Fee: A $250.00 per field experience fee is required to defray costs of providing University supervisors and travel for University supervisors of student teachers.

Supplemental Designated Tuition: A $40.00 per semester credit hour fee will be assessed for students enrolled in any School of Management, Erik Jonsson School of Engineering and Computer Science, School of Arts and Humanities ATEC courses, School of Behavioral and Brain Sciences graduate Speech Language or Audiology (COMD or AUD) courses, and School of Social Sciences graduate Public Affairs (PA) courses. These fees are assessed to defray the higher costs associated with instruction in these schools.

Universities Center at Dallas Fee: A $15.00 per semester credit hour fee is required to defray the costs of courses taken at the Universities Center at Dallas.

Financial Aid

The Student Financial Aid Office is available to assist students in obtaining funds to attend the University. Aid is available in the form of loans, grants, and part-time employment or any combination of those programs. Limited numbers of scholarships are available. The total amount of aid the student receives depends on the level of financial need, submission of appropriate financial information and applications, academic records, and the availability of funds.

Students are encouraged to contact the Financial Aid Office to obtain appropriate application materials and to determine eligibility for the various forms of aid available. The Financial Aid Office is located in the lower level of the McDermott Library, (972) 883-2941. Students may also apply for financial aid, check the status of their application, or contact the Financial Aid Office through our website at http://financial-aid.utdallas.edu/.

Information concerning student financial aid is accurate at the time of printing. Changes in regulations or policy on a federal, state, university, private lending, or donor level could affect the types of programs and amounts available, and/or program requirements.
Eligibility

Most of the aid listed in this catalog is awarded on the basis of financial need. Students are encouraged to determine the amount of resources that they can provide toward their education and to compare it with the average cost of attending the University. Student budgets are reviewed annually in accordance with federal and state guidelines. Federal guidelines outline what can be included in student budgets. The costs of tuition and fees, books and supplies, an average room and board cost, in-city transportation, and a limited amount for other personal expenses are the basic components of student budgets. When documentation is presented, the cost of childcare and costs of the student’s out-of-pocket expenses related to the student’s medical disability can also be included.

Financial need is the difference between the costs of attending the University and the amount a student and/or family can reasonably provide. The amount of the expected family contribution is based on federal guidelines reflecting total family income, assets, and number of dependent children currently attending post-secondary educational institutions. Family contribution is expected unless it is clearly established that the student is independent of any family support.

In determining whether a student is considered independent or self-supporting, the Financial Aid Office adheres to the standards set by the Department of Education to establish applicant’s dependency status. Students 24 years or older are considered financially independent. Students under the age of 24 are considered financially dependent unless they are orphans, wards of the court, veterans, graduate students, married, or unmarried but with legal dependents. Both self-supporting and dependent students must submit a Free Application for Federal Student Aid (FAFSA) form in order that a determination can be made of the expected resources available to the applicants.

Renewal of Financial Aid

For a student to be considered for a renewal of financial aid, a new Free Application for Federal Student Aid (FAFSA) and supporting documents must be submitted for each academic year. The FAFSA for the new academic year is available on January 1st of the calendar year for that particular upcoming fall. The awarding of renewal aid is subject to the same considerations used in awarding all previous financial assistance.

Required Course Load

The course load requirement for students receiving each type of aid is at least one-half the normal course load. Aid recipients should not reduce their course loads below the qualifying minimum hours as it may affect receiving financial assistance at a later date. Undergraduate students must maintain no fewer than 6 credit hours for each term of enrollment. There is no distinction between a regular, long semester and a short summer term when determining the required course load. Students should contact the Financial Aid Office before they reduce their course load to determine what effect the reduced course load will have on current and future financial aid eligibility.

Revocation of Financial Aid

Financial aid packages are reviewed by the Financial Aid Office and canceled if the student fails to maintain a satisfactory record of academic progress, or to enroll for and maintain the minimum number of course load hours. Aid packages may also be revoked because of changes in financial status. Partial or full repayment of awards may be required. In some instances, immediate repayment may be required.

Any change in a recipient’s financial situation, such as additional scholarships, loans, or change in employment status, must be reported to the Financial Aid Office, because compliance with federal regulations may require a revision of awards.

Satisfactory Academic Progress Policy for Federal Financial Aid

The University of Texas at Dallas has a “Satisfactory Academic Progress” policy for a student receiving federal student financial assistance.

Generally, the student is expected to remain in good standing by the satisfactory completion of a minimum number of credit hours, based on a percentage of the credit hours attempted and completed for each term of enrollment. This completion rate may vary depending on the student’s academic level and credit hour load. In addition, undergraduate students must maintain
a GPA of 2.00 on a 4.00 scale or above on all course work completed at the University. For more detailed information the student should contact the Financial Aid office. This information is also available online at the Financial Aid Office web site at http://financial-aid.utdallas.edu/. A copy of the Satisfactory Academic Progress policy is made available to all recipients of financial aid with their award letter.

Selective Service
Male students between the ages of 18 and 26 must be registered with Selective Service to qualify for Federal student loans or grant programs. This includes Federal Pell Grants, Federal College Work Study, Federal Stafford Student/Plus Loans, and Federal Perkins Loans. The Selective Service requirement also applies to Texas student loans and grant programs. Students may register with Selective Service or verify their registration at http://www.sss.gov/.

Types of Financial Aid
The following is a summary of the types of assistance that are available to students at The University of Texas at Dallas. The student should be aware that many of the programs are subject to change without notice by the state or federal government. Information on all programs may be obtained from the Financial Aid Office unless otherwise noted.

Academic Competitiveness Grant (ACG) and National SMART Grant
Students must meet the following requirements for both programs:
- Pell Grant eligible;
- U.S. Citizen;
- Full-time student.

Academic Competitiveness Grant Information
Up to $750 will be awarded to eligible first-year students and up to $1,300 for second-year students.

Students must have completed a rigorous secondary school program of study as established by a state or local educational agency and recognized by the U.S. Secretary of Education.

Students must be enrolled or accepted in a two- or four-year degree-granting institution of higher education.

First-year students must not have been previously enrolled in a program of undergraduate education and must have graduated from high school after January 1, 2006.

Second-year students must have graduated from high school after January 1, 2005, and have at least a cumulative 3.00 grade point average (GPA) during their first year of college.

National SMART Grant Information
Up to $4,000 will be awarded to eligible students.

Students must be enrolled in a four-year degree-seeking institution of higher education.

Students will be eligible if they are pursuing a major in mathematics, science (including physical, life, and computer sciences), technology, engineering, or a critical foreign language. A minimum GPA 3.00 is also required.

A listing of eligible SMART Grant majors can be found at http://financial-aid.utdallas.edu/.

B-On-Time Loan
The purpose of the Texas B-On-Time Loan program is to provide eligible Texas students no-interest loans to attend colleges and universities in Texas. If the student meets specified goals, the entire loan amount can be forgiven upon graduation. Students need to complete a FAFSA and be eligible to receive federal financial aid. Students must be
enrolled full time in an undergraduate degree and have graduated in the 2002-2003 academic year or later from the recommended high school curriculum. Students who have earned an associates’ degree from an eligible institution no earlier than May 1, 2005 can also be considered. Due to limited funding, previous recipients will receive first priority, followed by students who qualify for, but are not receiving a TEXAS Grant due to a shortage of funds for that program.

**Education Assistance Grant**

This program was established to provide financial assistance to students by an act of the Texas Legislature. The program is funded through appropriation of a portion of the designated tuition charge for resident and non-resident students. Students completing a FAFSA will automatically be considered for this grant. Awards are based on availability of funds and the student’s financial need.

**Federal College Work Study Program**

College work study employment is available to students on the basis of demonstrated financial need. The acceptance of employment reduces the amount of loan assistance a student will be permitted to accept in order to meet financial need to cover educational expenses.

Compensation depends on the type of job, qualifications, and classification. The number of hours and work schedule will vary depending on the position. For information on job availability, students need to contact the Career Center at (972)883-2943.

**Federal Pell Grant**

Students wishing to apply for this federal program must complete a “Free Application for Federal Student Aid” (FAFSA). Applications are available at the Student Financial Aid Office, high schools, and local libraries, or through the Internet at [http://www.fafsa.ed.gov/](http://www.fafsa.ed.gov/), selecting the “Applying for Financial Aid” option. Applications are processed by the U.S. Department of Education. The amount of the grant for undergraduate students is based on the family contribution, the amount of funds available for the program, number of hours enrolled per semester, and the cost of education, not to exceed one-half of educational cost. This grant is available to undergraduate students only who are pursuing their first baccalaureate degree.

**Federal Perkins Loan Program**

This loan program provides a combination of federal and institutional funds to students who qualify on the basis of financial need. High priority is given to those students who demonstrate exceptional need. Due to the limited amount of funding through the Federal Perkins Loan program, priority is also given to students who are not able to borrow through other federal educational loan programs as a result of reaching the aggregate borrowing amount through those federal educational loan programs. Students completing a FAFSA will automatically be considered for this program.

An undergraduate student may borrow up to a maximum amount of $4,000 per academic year for a total of $20,000 which includes all undergraduate Federal Perkins loans.

A Federal Perkins loan bears a modest interest rate. Borrowers are required to begin repayment of principal and interest nine months after they cease to be at least half-time students. Repayment may extend over a ten-year period; however, there is a minimum rate of repayment.

**Federal Stafford Student Loan Program**

Funds from this program are made available to the student from lending institutions such as banks, savings and loan associations, and credit unions. Students must qualify for a Federal Stafford Subsidized Student Loan on the basis of need. The U.S. Government will pay the interest on a Federal Stafford Subsidized loan as long as the student remains enrolled in school at least half-time. The Federal Stafford Unsubsidized Loan Program is available for students who do not demonstrate financial need. Students are responsible for payment of interest while they are enrolled in school. Students interested in this program should contact the Financial Aid Office for further information. Students completing a FAFSA will automatically be considered for this program.
The loans are made at a modest interest rate and there exists a maximum amount that can be borrowed for a given academic year. See the Financial Aid Office concerning the maximum loan amount. The borrower will be required to begin repayment of principal and interest 6 months after graduation or after he or she ceases to be at least a half-time student. Repayment may extend over ten years, but the program requires a minimum monthly payment.

Federal Supplemental Educational Opportunity Grant (FSEOG)
Through this federally funded program a limited number of grants are available to undergraduate students with exceptional financial need. Students completing a FAFSA will automatically be considered for this grant. Awards are based on availability of funds and the student’s financial need.

General/Endowment Scholarship Programs
Information about a variety of scholarships awarded on the basis of academic merit and achievement is available from the Office of Financial Aid. The University of Texas at Dallas also offers a number of endowed scholarships that are administered by a school or program. Students are encouraged to contact their school dean or program office to obtain information about eligibility criteria and scholarships awarded in the student’s area of study.

In addition to any specific criteria governing awards of competitive scholarships (e.g., major field of study) the committee responsible for such awards will give primary consideration to the applicant’s scores on standardized tests and scholastic records, both evaluating the type and nature of courses taken and the grades achieved in specific courses. The committee may also consider and give positive weight to such factors as the following in designating recipients:

- Achievements in work experiences
- Community service
- Extracurricular activities; leadership
- Surmounting obstacles to the further pursuit of higher education
- Socioeconomic background
- Educational level
- Status as a first generation college student.

Scholarships typically are awarded in the spring semester for disbursement during the following academic year. A few scholarships are awarded during the fall semester. Announcements about available scholarships, application procedures and deadlines are available in the Office of Financial Aid (972-883-2941). Also, notices are distributed on University bulletin boards, placed in the student newspaper (The Mercury), and on the Financial Aid Office web site at http://financial-aid.utdallas.edu/ at the beginning of the fall and spring semesters.

Hazlewood Veteran Tuition Exemption
Certain veterans who have served on active military duty, who were residents of Texas at the time of entry into the service, who have resided in Texas for the last 12 months prior to the date of registration, and whose entitlement to educational benefits under federal legislation has been exhausted, are eligible for exemption from the payment of tuition, general fees and laboratory fees. However, an individual who has “exhausted his/her federal education benefit” as a result of default on a federal or state loan may NOT receive the Hazlewood benefit. These exemptions also apply to children of members of the Armed Forces of the United States killed in action, missing in action, who die or died while in service, or whose death is documented to be directly caused by illness or injury connected with service in the armed forces; and to children of members of the Texas National Guard killed since January 1, 1946, while on active duty. Effective fall 1995, a maximum of 150 credit hours (including remedial courses) of work was established by the state for which a person may receive benefit under the Act. This accrual will begin with the fall 1995 semester. Applications are available in the Financial Aid Office.

Hinson-Hazlewood College Student Loan Program
Texas residents who meet eligibility requirements may borrow funds to meet a portion of their school expenses. The loan carries a modest interest rate. Repayment begins 6 months after graduation or withdrawal from the University.
Other On-Campus Employment
Various programs and schools of the University employ students in positions that are not work study positions and are not based on need. In accordance with appropriate guidelines, pay scales depend on the type of job, qualifications, and classification. Normally, students will be employed for a maximum of 19 ½ hours per week. Students interested in these positions should contact the Career Center at (972)883-2943.

Property Deposit Scholarship
This is an institutionally sponsored scholarship program with limited funding. The amount of the award varies. Eligibility is based on need. Students completing a FAFSA will automatically be considered for this grant.

TEACH Grant Program
The College Cost Reduction and Access Act of 2007 created the Teacher Education Assistance for College and Higher Education (TEACH) Grant Program that provides up to $4,000 per year ($16,000 total for four-year programs) in grants to students who intend to teach full-time in high-need subject areas for at least four years at schools that serve students from low-income families.

Eligible students must be enrolled in coursework that is necessary to begin a career in teaching or plan to complete such coursework. Coursework that will prepare a student to teach in a high-need subject area (e.g., math courses for a student who intends to be a math teacher) is acceptable.

Eligible students must meet the following academic achievement requirements of either scoring above the 75th percentile on one of the following college admissions test(s) – SAT, ACT, or graduate from High School with a cumulative GPA of at least 3.25 on a 4.00 scale AND maintain a cumulative GPA of at least 3.25 throughout their academic program for which they receive a TEACH grant.

Eligible students must complete TEACH Grant counseling and sign a TEACH Grant Agreement to Serve and Promise to Pay each year with the U.S. Department of Education. The TEACH Grant service agreement specifies the conditions under which the grant will be awarded, the teaching service requirements, and includes an acknowledgement by the student that they understand that if they do not meet the teaching service requirements they must repay the grants as a Federal Direct Unsubsidized Loan, with interest accrued from the date the grant funds were first disbursed.

Teaching Obligation
To avoid repaying the TEACH Grant as a loan with interest, you must be a highly-qualified, full-time teacher in a high-need subject area for at least four years within eight years of finishing the program at a school serving low-income students.

Texas Public Educational Grant
An act of the 64th Texas Legislature established a grant program to provide financial assistance to students. The program is funded though appropriation of a portion of the tuition charges for resident and non-resident students. Students completing a FAFSA will automatically be considered for this grant. Awards are based on availability of funds and the student’s financial need.

Toward Excellence, Access and Success Grant (TEXAS Grant)
This program is to provide a grant of money to enable academically prepared eligible students to attend public and private nonprofit institutions of higher education in Texas. An undergraduate student is eligible who:

- is a Texas resident;
- graduated from a public or accredited private high school in Texas no earlier than fall 1998. There is a time limit of 16 months after graduating from high school to be eligible;
- completed the recommended or advanced high school curriculum or its equivalent;
- had financial need, with an EFC of 4,000 or less for the academic year;
- has applied for any available financial aid or assistance;
• enrolls at least \( \frac{3}{4} \) time in an undergraduate degree; and
• has not been convicted of a felony or a crime involving a controlled substance.

The amount of the grant is based on the average tuition and fees charged at 4-year public institutions. Students who continue in college and who meet program academic standards can receive awards for up to 150 semester credit hours or for six years, whichever occurs first. Requirements for continued funding are completion of at least 75 percent of the hours taken in the prior semester, plus an overall grade point average in college of at least 2.50 on a 4.00 scale. Awards will be made through the Financial Aid Office. Students completing a FAFSA will automatically be considered for this grant. Students must apply early as there is limited funding available.

**Short-Term Emergency Loans**

Students needing emergency help with educational expenses may borrow from the short-term loan fund. Loans must be repaid within the semester during which they are borrowed or a fee will be charged of $30.00/month or a maximum of $90.00/semester. Contributions to these funds have been made by Mrs. Lloyd V. Berkner, Mr. and Mrs. Louis Castelli, the Kiwanis Club of Richardson, Rotary Club of Richardson, the Richardson Savings and Loan Association, the First Texas Savings and Loan Association of Dallas, Richardson Altrusa Club, Chaparral Steel Company, and funds set aside out of student tuition.

Students with questions about financial aid can contact a Financial Aid Counselor via the Internet at http://financial-aid.utdallas.edu/.
Resources for Study and Campus Life

Callier Center for Communication Disorders

The Callier Center is an internationally recognized institution that offers services to people who have any type of communication disorder. Acknowledged for meeting the assessment, treatment, education, and social service needs of children and adults with communication disorders, the Center has programs in preschool education, parent education, and child development. Its clinical services include pediatric and adult services in audiology, speech pathology, and language development; its research activities include psychoacoustics, auditory neurophysiology, speech science, and audiology. Graduate classes are conducted at the Callier Center Dallas facility, adjacent to The UT Southwestern Medical Center and Callier Center-Richardson on the main UT Dallas campus.

Career Center

Students are encouraged to contact the Career Center early in their schooling. By doing so they can fully access all the services needed for the development of their long-range career plans. The staff provides students with career counseling and may evaluate and test in the areas of skills analysis, interest identification, and values clarification. Computer-assisted career information searches and a Career Resource Library contain occupational and employer information.

The Career Center provides pre-employment preparation assistance through mock interviews and a variety of workshops on such topics as résumé writing, business letter writing, identifying marketable skills, interviewing skills, and conducting an effective job search. A résumé editor is available to critique student résumés and professional documents. Representatives of business, government, industry, education, and social agencies recruit UT Dallas students at Career Expos and through on-campus interviews. The Career Center also manages the Internship/Cooperative Education program for all majors, except for students in EE/CS majors.

Part-time jobs, both on- and off-campus, internships, full-time jobs, and on-campus interview schedules are posted through UT Dallas CareerWorks. All students register for UT Dallas CareerWorks by accessing the Career Center website. Students upload a résumé into the system in order to apply for qualified positions or to make it available for employer referrals. Employers may have access to candidate résumés via various web résumé books set up in the UT Dallas CareerWorks system.

For more information, contact the Career Center in the McDermott Library, RM 1.312 (Phone: (972)883-2943), Web: http://www.utdallas.edu/career/, Email: careercenter@utdallas.edu.

Carolyn Lipshy Galerstein Women’s Center

The Women’s Center works with organizations in the University and the Dallas communities to provide resources and services that enhance the experience of all campus women by contributing to an academic atmosphere in which positive role models are highly visible and gender bias and inequities can be addressed. The Center acts as a central coordinating agency for campus and community groups, and offers opportunities and events that promote a broader understanding of the diverse experiences and ideas of women. The Center offers dynamic programs, and provides resources and services that will help the women of our community to grow and develop, personally and professionally.

How can I use the Women’s Center?

- Meet new people, network with other professionals, socialize...talk to someone who’s willing to listen;
- Take a break, study, use the computer...read or rent a book, video, or magazine from our library;
- Learn about resources on campus and in the community that address your specific needs;
- Use the Center as a meeting place for your organization;
- Volunteer at the Women’s Center, or find out about volunteer opportunities in the community;
- Stay current on upcoming events and important issues;
- Find out about scholarships offered in the community and nationally.
Comet Card
The Comet Card is the official University identification card for all students, faculty, and staff. The Comet Card allows students to use campus facilities and services and offers a debit feature where money may be stored to make on-campus purchases and payments. The card can also be linked to a Wells Fargo banking account and used as a pin-based debit card. Cards are issued through the Info Depot (SU 2.204). For additional information call (972) 883-4123 or check our website at http://www.utdallas.edu/cometcard/.

Computing Services
Information Resources provides computing facilities for student, faculty, and staff use in instruction and research.

General Access computer labs are located on the first and third floor of the McDermott Library and the ground floor of the Jonsson Building. The Labs provide a modern, networked computing environment with Windows-based and Macintosh computers, scanners and more.

Dedicated systems are also available to support such functions as campus information services, programming, research-related activities, and computationally intensive applications.

A sophisticated campus-wide network permits offices and laboratories direct access to extensive computing resources both on and off campus. The University maintains high bandwidth connections to the commodity internet as well as appropriate research and education networks such as Internet 2. Primary remote services access is through the Galaxy portal (http://galaxy.utdallas.edu/). Additional remote access to the campus network is provided through VPN (Virtual Private Networking) services.

The University provides wireless LAN access to the campus community areas across most of the institution. All holders of a UT Dallas NetID may utilize the campus network using devices with the appropriate wireless LAN 802.11b/a/g network interface. Guest wireless access is also provided on request (http://www.utdallas.edu/ir/).

Many of the schools, programs, and research centers operate their own computing facilities that are also available to students as appropriate. Details of these facilities can be found in the individual school/program sections of this catalog.

The University Help Desk is located in the Jonsson building and offers walk-in, telephone, email and web chat support for a wide range of technology problems. Contact info: 2911 (phone), assist@utdallas.edu (email).

The latest information regarding computing facilities can be found at the campus web site at http://www.utdallas.edu/ir/.

Disability Services
Disability Services provides reasonable accommodations for students with documented disabilities. Students are encouraged to register with Disability Services as soon as they are admitted to the University.

The Office of Disability Services is located in the Student Union (SU 1.610), (972) 883-2098. Additional information is available at the Disability Services website located at http://www.utdallas.edu/disability/.

Distance Education
The University of Texas at Dallas utilizes e-learning technologies to provide students the opportunity to engage in coursework from remote locations and without the time constraints of the traditional face-to-face classes. Distance Education opportunities at the University include courses and entire programs taught online via the internet, as well as courses conducted through videoconferencing in real time. Additionally, the University has partnered with other U.T. System schools to provide cross-campus courses through the U.T. TeleCampus. UT Dallas currently offers courses in a number of areas from across the campus, including courses in teacher education and the natural sciences. Furthermore, distance learning opportunities now include blended courses that utilize both on-campus and off-campus presentation, providing students an opportunity to maximize their learning by collaborative learning experiences. UT Dallas also works with a number of partner institutions to provide students additional learning opportunities through exchange programs and other collaborative programs both nationally and internationally.
More information about specific distance and e-learning programs or courses at The University of Texas at Dallas and registration procedures can be found in the Class Schedule or on the distance learning web site at http://www.utdallas.edu/distancelearning/.

**Health Insurance**

A group health insurance plan is available to all part-time and full-time registered fee-paying students at. In order to maintain your eligibility you must be enrolled and attend class through the 12th class day.

The Board of Regents of The University of Texas System requires all F and J visa holders to have approved health insurance and repatriation/evacuation coverage while enrolled at any U.T. Institution. Each semester when international students register for classes their account will be assessed the Student Health Insurance (SHI) fee to meet these requirements. This fee may be waived if the student has other approved coverage for the duration of the coverage period. Waivers must be obtained prior to Census Day of each semester.

The Student Health Insurance Office, located in McDermott Library room 1.310, provides assistance to all students requesting information about the student health insurance policy, filing claims, finding medical care, understanding the explanation of benefits, etc. The SHI Office makes available to all students guidance about their insurance related issues. For more information on UT Dallas's Student Health Insurance Services, see our web site, http://www.utdallas.edu/insurance/.

**Health Services**

The Student Health Center offers routine medical treatment to all currently enrolled students who have paid their tuition, have a Comet Card and are attending classes. Services include diagnosis and treatment of acute illnesses and injuries, general medical problems, some gynecological problems, health education, and limited immunizations. Chronic health problems and patients who are pregnant are out of the scope of practice of the Health Center and must be managed by an off campus provider. While there is no cost for most services, there are charges for laboratory services, medications and specific procedures provided at the Health Center. The Health Center schedules patients by appointment and promptness of arrival for your appointment is important. All charges for services or treatment obtained from facilities other than the campus Health Center are the full responsibility of the individual student. The staff at the Health Center make referrals as indicated.

The Student Health Center provides information on the prevention and transmission of HIV infection and AIDS, offers HIV and AIDS education programs, and offers testing.

Information about bacterial meningitis is available upon request at the Student Health Center. Information also is distributed in Orientation packets, in the A to Z Guide to Student Life, in the graduate and undergraduate applications for admission to the University and is published in the University newspaper, The Mercury, at the beginning of each semester.

Health Education and the Health Education Coordinator are also a part of the Student Health Center and offer many educational materials, information and programming on various health subjects.

All medical services and records are held confidential to the extent permitted by law and are governed by the Family Educational Rights and Privacy Act, the Texas Open Records Act, and Article 5561(h), Vernon’s Annotated Texas Civil Statutes.

The Student Health Center is located in the Student Union (SU 1.606), (972) 883-2747.

The University of Texas at Dallas does not have immunization requirements other than TB testing for all persons born outside the United States.

**International Student Services**

The International Student Services Office provides services to students that hold a non-immigrant visa status while studying at UT Dallas. The office staff offers individual counseling as well as group workshops to aid international students in understanding and complying with U. S. Department of Homeland Security regulations relating to their stay in the United States as non-immigrants. Services include issuance of F-1 and J-1 immigration documents, workshops regarding Optional and Curricular
Practical Training, invitation letters for visiting family members, travel authorizations, and enrollment letters. Special programs include International Student Orientation, Introductions to US Classroom Culture, International Festivals, Non-Immigrant Tax Workshops, Immigration Attorney workshops, etc. The International Student Services Office also administers the UT Dallas student health insurance program. The health insurance plan is available at a minimal cost to all full- or part-time students and their families. Health insurance is required for all international students. The International Student Services Office, MC 1.310, may be contacted by calling (972) 883-4189. Information is also available at http://www.utdallas.edu/student/international/.

Learning Resources
The Learning Resource Center offers assistance to students in the areas of reading, writing, mathematics, and study skills. These services are available through individual appointments, group workshops, short courses, and video tapes.

The Writing Lab offers one-to-one assistance with writing assignments and general writing skills. Appointments are required.

The Math Lab gives short-term and semester-long support for a variety of mathematics courses. Students may drop in or visit these labs on a regular basis.

The Supplemental Instruction program offers facilitated group study sessions as a supplement to many UT Dallas courses. Students should check with the center for availability of individual tutoring in specific subjects.

The Learning Resource Center also offers developmental math, reading, and writing classes. These classes are for credit, but they do not count toward graduation.

Assistance is also available in study skills, note taking, writing, test taking, algebra, and preparation for the THEA (required for teacher certification), GRE, GMAT, and LSAT. In addition, students can receive help with time management, basic mathematics improvement, test-anxiety reduction, and various other study techniques and strategies. All students enrolled at the University are eligible for these services.

The center, located in MC 2.402 – MC2.412, may be contacted by calling (972) 883-6707.

Multicultural Center
The Multicultural Center (MC) provides cultural programs, support services, resources and cultural education programs. The MC is a place for students, faculty and staff to gather and relax. The MC has a comfortable lounge area with a television, videos, computer lab, work station, and a meeting room. Traditional events hosted by the MC are Hispanic Heritage Month, Black History Month, MLK Jr. Breakfast, Asian-American Heritage Series, Native American Heritage program and the Leadership Speaker Series. The MC is home to the Multicultural Peer Advocates (MPA’s). The MPA’s are student peer advocates that are available for personal, social or academic assistance.

Office hours are Monday through Thursday 8:30 am – 6:30 pm, Friday 8:30 am – 5:00 pm. Location: Conference Center CN1.126. Email: Multicultural@utdallas.edu. Phone: (972)883-6390. Website: http://www.utdallas.edu/multicultural/. Director: Arthur Gregg.

Professional Preparation
Students at the University who wish to prepare for a career in teaching, law, medicine, or a paramedical field should make every effort to ensure that their course work at the upper division is in keeping with particular requirements of that chosen profession.

Health-Related Professions
Healthcare professional programs do not state a preference about an undergraduate major field, thus permitting students to choose degree programs that correspond to their special abilities and interests. Students interested in the
health professions may choose any major as long as they meet the minimum requirements stated by the professional school in question. Students who wish to continue their education in any professional program of study should contact the Health Professions Advising Center (HPAC) during their first semester at UT Dallas. The advisors may be reached by calling 972-883-6767 or by visiting their office at JO 4.800. More information may be found on their website at http://www.utdallas.edu/pre-health/.

**Law**

Law school admission committees do not normally state a preference regarding an undergraduate major field of study, thus permitting students to choose degree programs that correspond to their special abilities and interests. A pre-law internship is available for students from across the University who plan to practice law. Students interested in a career in law should contact the pre-law advisor in the Office of Undergraduate Education, MP 3.206, or by calling 972-883-4607. The Pre-Law website is located at http://www.utdallas.edu/dept/pre-law/.

**Teacher Certification**

Students who wish to gain certification to teach in Texas schools may do so at UT Dallas. Students must first be admitted individually to the academic program of their choice. They must also seek admission to Teacher Certification through the Teacher Development Center (972) 883-2730 as early as possible. The Teacher Certification website is located at http://utdallas.edu/teach/.

Professional education courses, including student teaching, of at least 18 semester hours are prescribed to meet state certification regulations. Certification requirements may increase the number of semester hours normally required for graduation. Careful planning and utilization of electives for fulfillment of professional requirements may allow the student to avoid such an increase.

Teaching fields in which certification for Grades 8 - 12 may be earned are English Language Arts and Reading, Social Studies, Computer Science, History, Life Sciences, Physical Science, Science, Chemistry, and Mathematics. Teaching fields in which certification for Grades 4 - 8 may be earned are Science, Mathematics, Social Studies, English Language Arts and Reading, and Generalist 4-8. The Generalist Certificate is the only teaching field available at UT Dallas for Early Childhood (EC)– 4 certification.

All students interested in Teacher Certification should consult the section on Teacher Certification in the catalog, as well as the appropriate subject area.

**Recreational Sports**

The Department of Recreational Sports encourages students, faculty, and staff to get involved and interact with several different recreation programs. Recreational Sports provides UT Dallas with a quality facility and diverse recreational programs to enhance the overall educational experience. Our goal is to expand the knowledge of and participation in recreational activities in order to foster healthy lifestyles, sportsmanship, teamwork, and leadership.

The Activity Center is managed by the Department of Recreational Sports and contains a state of the art fitness center, 4 racquetball courts, 2 squash courts, 4 basketball courts, a multi-purpose room, and a 25-yard indoor swimming pool. In addition to the Activity Center, Recreational Sports oversees the outdoor basketball courts, sand volleyball courts, soccer fields, tennis courts, and softball fields.

The Department of Recreational Sports is made up of 5 program areas: Aquatics, Club Sports, Fitness, Informal Recreation, and Intramural Sports. These areas are designed to offer each participant a variety of events and activities. Recreational Sports believes that there is something for everyone.

**ROTC Programs**

Students at The University of Texas at Dallas may participate in the Air Force ROTC program at The University of North Texas, or in the Army ROTC program at The University of Texas at Arlington.
Students register for the ROTC courses by contacting the Office of the Registrar at the time they register for other UT Dallas courses. Payment for the courses is through the UT Dallas Bursar Office by the published payment deadlines. The ROTC courses are used as elective courses. Successful completion of degree requirements and the respective ROTC program can lead to a commission as a second lieutenant in the United States Air Force or the United States Army.

For further information and application procedures, contact: AIR FORCE ROTC, Detachment 835, Air Force ROTC, The University of North Texas, P.O. Box 305400, Denton, Texas 76203-5400, Telephone (940) 565-2074; or ARMY ROTC, Enrollment Officer, Army ROTC, The University of Texas at Arlington, P.O. Box 19188 Arlington, Texas 76019, Telephone (817) 272-3281 (metro).

Student Counseling Center

Students are assisted in resolving personal difficulties and enhancing skills in order to succeed in their academic pursuits, as well as achieve personal and emotional well-being. Students’ development is facilitated by a variety of services including personal counseling, psychiatric services, consultation, and outreach. The Student Counseling Center also serves the UT Dallas community by providing crisis management and intervention. In addition, the Center is committed to the training and education of graduate students as future helping professionals.

Stress, depression, anxiety, and adjusting to life transitions are some of the issues that bring students to the Counseling Center for confidential Individual Counseling. Other common concerns include relationship conflicts, grief and loss, loneliness, self-esteem, body image, eating disorders, or planning for the future. Relationship Counseling for students and their partners focuses on resolving conflicts and improving communication. Psychiatric referrals are provided for students in counseling when it is determined that such assistance would benefit a student and their treatment. Consulting is provided to students, faculty or staff for helping a friend, family member or student with a personal problem. Workshops are offered during the semester to assist students in developing life skills such as time management, effective communication and managing test anxiety. The Personal Development Library includes books, audiotapes, and self-help videos with information on a wide range of topics including sexuality, relationship enhancement, dealing with emotions, and personal growth.

Services are provided by licensed mental health professionals and trainees under the supervision of licensed psychologists. The center is a member of the Dallas Metropolitan Consortium in Psychology, a training program for pre-doctoral psychology interns that is accredited by the American Psychological Association. For more information, visit our website at http://www.utdallas.edu/counseling/.

Student Union 1.608
(972)883-2575
James Cannici, PhD Director

Student Exchange – U.T. System

The U.T. System Student Exchange program is designed to allow upper-division students enrolled in an institution of the U.T. System to take courses or engage in research at another institution within the System during a regular semester or summer session.

A UT Dallas student in good standing who has completed at least 60 semester credit hours is eligible to participate in the exchange program. Approval by the student’s Associate Dean of Undergraduate Education is also required. Visiting students register and pay tuition and required fees at their home institutions and are given normal privileges associated with available student services at the exchange institution. Visiting students are subject to the rules and regulations of both institutions.

Each U.T. System institution has designated an individual to coordinate and approve undergraduate student exchanges. Interested UT Dallas students should contact the Office of the Dean of Undergraduate Education for additional information: phone (972) 883-6706 or e-mail ugdean@utdallas.edu. Students at other U.T. System schools wishing to take courses at The University of Texas at Dallas under this exchange program should contact and work through the office designated by their home institution.
Student Government
Through the Student Government a student can express views to the student body, the faculty, and the administration. The Student Senate is composed of senators elected at-large and elected by school each spring. The president and vice president are elected by the student body each spring. Further information may be obtained from the Student Government Offices in the Student Union, SU 2.604, (972)883-2284.

Student Involvement
The University of Texas at Dallas encourages student involvement and provides numerous opportunities for students to further their co-curricular and extra-curricular interests. Students may have a voice and contribute to student life through participation in the Student Government, the Student Union and Activities Advisory Board, Student Media (UT Dallas Mercury and Radio UT Dallas), Greek Life, Spirit Program, various University committees, and student organizations. For more information contact the Office of Student Development, SU 2.604, (972) 883-6158 or the Center for Student Involvement, SU 2.506, (972)883-6551.

Student Life
Student Life offers a variety of student services and programs, including Disability Services, New Student Programs, Multicultural Center, Intramural and Club Sports, NCAA Division III Athletics, Residential Life, Student Publications, the Student Union and Activities Advisory Board, Service Learning, and the Child Care Center. Student Life also provides support for student organizations and assists students in the interpretation of University rules and regulations including those regarding student discipline and conduct. Call (972) 883-6391 for more information.

Student Organizations
Registered student organizations provide the major means by which students can contribute to student life while developing friendships, interests, talents, and leadership skills. There are over 100 student organizations at UT Dallas that cater to a variety of interests, such as academic and honor groups, service clubs, religious groups, ethnic groups, and special interest groups. Detailed information on the groups and guidelines for forming new organizations is available in the Center for Student Involvement (2.506) in the Student Union, (972) 883-6551.

Student Publications
The UT Dallas Mercury is the official student newspaper of the University. It is published bi-weekly. Funded with student service fees and advertising sales, the Mercury is available without charge to all students. Other publications are the Guide to Student Life mailed to new students each semester and This Week at The University of Texas at Dallas, a weekly publication distributed on campus.

The UT Dallas Mercury newsroom can be reached at (972) 883-2286. For more information regarding the UT Dallas Mercury, contact (972)883-2290 or visit their office at SU 2.416.

Student Union
The North Wing of the Student Union houses the Comet Café, the Info Depot, lounges, Radio UT Dallas, a television lounge, billiards and ping pong, a payphone, first-aid medical dispenser and a vending area with microwaves. In addition, an ATM is located in the Comet Café. The annex to the North Wing features The Pub, the best place to hang out on campus, listen to state-of-the-art stereo and catch the latest news or sporting events on television. The annex also houses expanded dining space, three meeting rooms, a childcare facility, Comet Card administrative offices, and a student organization suite.

The South Wing of the Student Union houses student service offices and provides areas for meetings and activities. The first floor houses the Dean of Students, Residential Life, New Student Programs, Student Health Services, Disability Services, Counseling Center, and Child Care Center. On the second floor are meeting rooms plus offices for Student Government Association, Greek Life, The UT Dallas Mercury, Student Development, SUAAB, Late Night Programming and Student Union staff.

The Student Union is open 24 hours a day, seven days a week.
Student Union and Activities Advisory Board

The Student Union and Activities Advisory Board (SUAAB), located in SU 2.506B, plans co-curricular and extra-curricular programs and events for the UT Dallas community. SUAAB’s goal is to provide programs to enrich students’ lives and to provide opportunities for faculty-student interaction. For more information, contact (972)883-6438.

Study Abroad

Information about educational opportunities in other countries, including study abroad, international internships, international research opportunities, and international scholarship programs, is available at the Office of International Education (OIE), located in Jonsson, JO 5.504. Students are required to attend an advising session before seeking staff assistance in selecting the program most appropriate to their individual needs and interests. The advising sessions include University policies governing study abroad, program options, funding sources, and application and selection procedures. Information is also disseminated through publications, special events, group meetings, individual appointments, reference materials and at the OIE web site, http://www.utdallas.edu/utdgeneral/provost/oie/. (See "International Education" located in the Academic Policies and Procedures section of the catalog for more details).

University Housing Information

University Housing is provided on campus with several affordable apartment living choices for those who appreciate the advantage of being able to walk from their residence to class. The apartments are reserved for The University of Texas at Dallas students and offer a variety of floor plans and prices. Locations include University Village, a community owned by UT Dallas and managed by American Campus Communities, and Waterview Park Apartments, a community owned by the Utley Foundation managed by University Partners.

In accordance with University policy, all freshmen are required to live in either University Village or in the new suite-style 400-bed residence hall, which is scheduled to open in the fall of 2009.

For more information please http://www.utdallas.edu/student/slife/housing/.

Or contact:

University Village
2800 Waterview Parkway
Suite #200
Richardson, TX 75080
(972)792-9100

Waterview Park Apartments
2800 Waterview Parkway
Suite #100
Richardson, TX 75080
(972)454-5000

UT Dallas’ Residential Life Office works with students to build a community at the apartments and to assist students with concerns related to apartment living. Residential Life staff members are also available to assist personal and academic concerns. For more information please call (972)883-6391.

University Libraries

The Eugene McDermott Library and the Callier Library support the research, instruction, and community service programs of the University by providing access to information in both print and electronic forms. The libraries consist of over two million items, including more than a million volumes, over 30,000 current periodical titles, as well as one million government documents, microforms, and maps. The McDermott Library is a U.S. and Texas state depository.

Special collections include the Wineburgh Philatelic Research Library, the Belsterling Collection, and the History of Aviation Collection.

The libraries provide an ever-expanding digital collection that is available to distance learners. Users connect to these resources through the library portal at http://www.utdallas.edu/library/. Current students have unlimited access to the digital library.
The librarians and staff provide competent and cordial interactions with the people they serve. Librarians provide class and individual instruction on the use of the library.

The library collections are enhanced by the Interlibrary Loan Service, which provides students with books or articles from a network of major libraries. Student research is facilitated by copiers available to duplicate from paper, microfilm, or microfiche. The Electronic Reference Center provides connections to our electronic material. The libraries offer students with disabilities a range of services to encourage their independent research.

**UTD Child Care Center**

A licensed Child Care Center under the supervision of the Office of Student Life and the Richardson YWCA is located in the Student Union. Evening care is available for children ages four to eleven of University students. For additional information call (972) 883-2945.

**Varsity Sports**

UT Dallas is a member of the NCAA Division III and America Southwest Conference and sponsors thirteen men’s and women’s sports including soccer, basketball, cross-country, tennis, golf, softball, baseball and women’s volleyball. Aspiring student athletes are encouraged to contact the coaching staff of their chosen sport(s) by calling (972) 883-4490. Intercollegiate athletics is a vital component of the total campus life and spirit at The University of Texas at Dallas.
Degree Programs

Academic Degree Requirements

An undergraduate education at The University of Texas at Dallas is designed with several goals in mind. First, the purpose of an undergraduate education is to acquaint students with ways of knowing the world of the natural sciences, mathematics, arts, humanities, and social and behavioral sciences. Therefore, all students are required to complete a Core Curriculum consisting of 42 semester credit hours. Secondly, students are expected to acquire depth in a field of study. To this end, students must fulfill the major and related requirements of a specified number of semester credit hours for their major. Thirdly, students are encouraged to take courses outside of their major and related field and beyond the Core Curriculum, and thus students are given free and advanced elective hours in which to explore intellectual domains beyond their area of specialization and beyond the core requirements.

In order to graduate with a baccalaureate degree from UT Dallas, students must complete and receive credit for all graduation requirements stated on page 31 “Graduation Requirements” as well as specific degree requirements.

Students are responsible for fulfilling their degree requirements and enrolling in courses appropriate to their degree programs. Students should, at the lower division, complete all freshman and sophomore prerequisites for the degree program. These requirements are set by the degree program and are listed under the program heading in the catalog; the number of semester credit hours may vary according to degree program. Students who are Texas residents should be aware that state law limits the number of semester credit hours that an undergraduate Texas resident may complete while paying tuition at the rate provided for Texas residents. See the section on “Excessive Undergraduate Hours” on page 48.

Core Curriculum

The University of Texas at Dallas requires that all students complete a general education Core Curriculum of 42 semester credit hours that serves as a broad foundation for the undergraduate degree. These requirements must be met by every student pursuing a baccalaureate degree at The University of Texas at Dallas, regardless of their major. Specific approved courses must be used to satisfy each Core requirement (see the Schedule of Classes). In accordance with the Texas Education Code, Chapter 61, Subchapter S, a student who successfully completes the entirety of a Core Curriculum at another Texas public institution of higher education before matriculating at UT Dallas may transfer that block of courses to UT Dallas where it will be substituted for the UT Dallas Core Curriculum. If a student does not complete all of the Core Curriculum at another Texas public institution of higher education before matriculating at UT Dallas, the student will receive credit for the portion completed and then be required to complete additional courses from UT Dallas’ Core Curriculum.

Communications (Chart 010) 6 hours

The goal of the communications component of the core curriculum is to develop students’ mastery in writing. Students must complete one course that requires them to learn to communicate effectively in clear and correct prose and to master several modes of writing, including descriptive, expository, narrative and self-expressive. Students must also complete a second writing-intensive course that may require them to master specific forms of writing tailored to the professional standards in their major field of study. All courses require that students write, receive detailed feedback about, and revise at least 15 double-spaced pages.

Component Learning Objectives:
1. Students will be able to write effectively using appropriate organization, mechanics, and style.
2. Students will be able to construct effective written arguments.
3. Students will be able to gather, incorporate, and interpret source material in their writing.
4. Students will be able to write in different ways for different audiences.

Mathematics (Chart 020) 6 hours

The goal of the mathematical component of the core curriculum is to develop quantitatively literate citizens, capable of applying mathematical tools in the solution of real world problems. Familiarity with mathematical concepts and tools will enable persons to better cope with the complex financial, business, investing, and daily living problems encountered in the modern world. Students must master the formal principles of a college-level math (algebra or calculus at a higher level than high school algebra II) and one advanced field of mathematics beyond college math (logical reasoning and inference; the application of mathematical concepts; statistical methods; or formal principles of calculus or advanced algebra).
Component Learning Objectives:

1. Students will be able to apply basic mathematical methods to modeling and solving real-world problems.
2. Students will be able to formulate and interpret basic mathematical information, numerically, graphically, and symbolically.
3. Students will be able to identify and explain the limits of mathematical models.

**Natural Science (Chart 030) 9 hours**

The goal of the natural science component of the core curriculum is to develop an appreciation of the intricacies of the natural world and to be able to describe and explain some of the basic principles of how the natural world functions. A more scientifically literate population will better cope with understanding and acting on issues of a scientific nature that affect their lives. Each student must complete 9 credit hours of science courses, one of which must have a laboratory component.

Component Learning Objectives:

1. Students will be able to describe laws, theories or findings basic to the science discipline.
2. Students will be able to apply scientific laws and principles of the discipline to arrive at problem solutions.
3. Students will be able to explain how experiments or observations validate or test scientific concepts.

**Humanities (Chart 040) 3 hours**

The goal of the humanities component of the core curriculum is to examine a variety of literary, philosophical, and/or historical works drawn from the humanities and presented in an established context as examples of expressions of individual and human values. Students will develop proficiency in research, critical thinking, and writing through a series of assignments in which they will demonstrate analytical processes of thought as well as intellectual responses to designated materials. Students must complete at least one course that is representative of literature, philosophy, cultural studies, modern language, or classic language.

Component Learning Objectives

1. Students will be able to examine and analyze a variety of works from the humanities, particularly those connected to literature and philosophy.
2. Students will be able to analyze and critically evaluate such works in the context of culture, society, and values as well as be able to compare and contrast the works with each other.
3. Students will be able to apply considered analysis and respond to works in the humanities as examples of human expression and aesthetic and philosophical principles.

**Fine Arts (Chart 050) 3 hours**

The goal of the fine arts component of the core curriculum is to expose and illuminate at least one and possibly multiple forms of artistic expression, including but not exclusive to the traditional areas of the performing and visual arts. Through a series of discussions and examinations or reports and/or papers, students will demonstrate their critical awareness of the fine arts, a knowledge of the scope and variety of forms within specific artistic expressions, and an appreciation for the aesthetic principles that guide the creation and evaluation of art on both an individual and cultural level. Students must complete at least one course that is representative of one or more of the visual or performing arts.

Component Learning Objectives

1. Students will be able to examine and respond critically to a variety of artistic forms in at least one and possibly multiple forms of expression drawn from either the visual or performing arts or some combination thereof.
2. Students will be able to demonstrate an appreciation for artistic expression and ability to analyze specific works of art within a cultural or social context.
3. Students will be able to develop a critical approach to a given form or forms of art and will be able to articulate a response in an intelligent and informed manner.

**American and Texas History (Chart 060) 6 hours**

The goal of the American and Texas history component of the core curriculum is to develop students’ comprehension of the scope of the American and Texas historical development through an examination of social, institutional, political, and cultural evolution over specified periods of time in the history of the United States and the State of Texas. Students must complete two courses that address the history of the United States or the State of Texas.
Component Learning Objectives
1. Students will be able to identify, explain, and give examples of significant developments in American and/or Texas history over a defined span of time.
2. Students will be able to examine and analyze historical development through knowledge of institutional, social, cultural, and political evolution and change over a defined span of time.
3. Students will be able to interpret and evaluate the acceptability of historical evidence.

Government (Chart 070) 6 hours
The objective is to increase students’ comprehension of the history and evolution of political institutions, and the interrelationship between institutions such as executive and legislative; the role that political institutions play in the lives of citizens, and to demonstrate the relationship between citizens and political institutions including activities such as voting and interest group activity that provides awareness for citizen influence. This knowledge is designed to equip students to be better informed citizens capable of making important decisions in various political contexts. Students must complete two courses that include consideration of the Constitution of the United States and the constitutions of the states, with special emphasis on the Texas Constitution.

Component Learning Objectives
1. Students will be able to provide examples of and apply important theoretical and scholarly approaches to understanding state and national institutional behavior, citizen involvement and interaction between citizens and institutions of government.
2. Students will be able to analyze and appreciate historical trends in development of government institutions and their constitutional foundations.
3. Students will be able to identify, describe, and analyze various mechanisms of citizen political involvement.

Social and Behavioral Science (Chart 080) 3 hours
The goal of the social and behavioral science component of the core curriculum is to increase students’ knowledge of how social and behavioral scientists describe, explain, and critically analyze the behaviors and interactions among individuals, groups, institutions, cultures, events and ideas. Such knowledge will better equip students to understand themselves and the roles they play in addressing the issues facing humanity. Students must complete at least one course that is representative of the following social and behavioral sciences: anthropology, economics, geography, psychology, sociology, or women’s studies.

Component Learning Objectives
1. Students will be able to describe major theoretical and scholarly approaches, empirical findings, and historical trends in the social/behavioral science discipline.
2. Students will be able to describe and apply basic research methods in the social/behavioral science discipline.
3. Students will be able to apply modes of critical thinking used in the social/behavioral science discipline.

Field of Study
If a student successfully completes a field of study curriculum approved by The Texas Higher Education Coordinating Board, that block of courses may be transferred to The University of Texas at Dallas and substituted for appropriate lower-division requirements of the appropriate degree. Following receipt of credit for these courses, students may be required to satisfy further requirements in the field of study curriculum for that degree at UT Dallas.

Major and Related Areas of Study
Courses taken in satisfaction of requirements for the student’s major field of study are major and related courses. Some of these may be outside the courses with the major’s designation; such courses are related to the major and required for its satisfaction. Other requirements may be satisfied by courses from lists of guided electives within the major and related courses. Finally, some requirements may be courses preparatory to the major; they are not considered major-core or major-related courses.
Electives
The degree requirements of every major include the opportunity for elective courses, that is, courses exploring subjects not directly related to a student’s major. The minimum number of elective hours is 18. Specific exceptions have been granted to Electrical Engineering and Accounting, where the minimum number is 12. Six of the elective hours for all majors are required to be selected from advanced electives, which are defined as upper-division courses, or lower-division courses that have prerequisites, and that are outside the major. All students are encouraged to use their electives to explore fields beyond their major.

Minors
Some academic units designate a set of classes that constitute a minor in that academic unit. The requirements of the minor are set by the faculty of the academic unit offering the minor, not by the academic unit of the student’s major field of study. When an academic unit offers a minor in a field of study, it is open to all students in the University regardless of school of origin. Students who take a minor will be expected to meet the normal prerequisites in courses making up the minor. Minors consist of a minimum of 18 credit hours, of which at least 12 must be upper-division hours, although individual academic units may require more hours at their sole discretion. Credit hours may not be used to satisfy both the major and minor requirements; however, free elective hours or major preparatory classes may be used to satisfy the minor. At least one-third of the hours for a minor must be taken at The University of Texas at Dallas. Students enrolled as of Fall 1999 who are pursuing majors under prior catalogs may incorporate minors in their degree plans. Students should consult with an advisor in their major field of study as they select and plan minors.

FERPA
The Family Educational Rights and Privacy Act (FERPA) is a federal law enacted in 1974 to protect the privacy of student education records. The law applies to those institutions that regularly receive federal funding from the Department of Education and is enforced by the Family Policy Compliance Office of the U.S. Department of Education.

FERPA forms for students can be found at http://www.utdallas.edu/student/registrar/forms/ (click on 'FERPA packet').

Complaints of alleged violations may be addressed to

Family Policy Compliance Office
U.S. Department of Education
400 Maryland Avenue SW
Washington, D.C. 20202-5920

The UT Dallas FERPA violation link is located at http://www.utdallas.edu/legal/ferpa/.

FERPA defines an eligible student as a student who has reached 18 years of age or is attending an institution of postsecondary education.

Students have four primary rights under FERPA:

- To inspect and review their education records
- To seek to amend those education records they believe to be inaccurate or misleading
- To have some control over the disclosure of information from those education records
- To file a complaint concerning alleged failures by an institution to comply with FERPA regulations within 180 days

More information regarding education records and the procedure for amending records can be found at http://www.utdallas.edu/student/registrar/faq.html#FERPA.

Directory or public information is information that is not generally considered harmful or an invasion of privacy if released. Directory information includes student’s full name, address (local and permanent), UT Dallas email, phone numbers, date and place of birth, major field of study, dates of attendance, degrees/awards received, most recent previous school attended, enrollment status (classification, under/grad, part/full-time), participation in officially recognized activities and sports, weight/height of members of athletic team, and photograph.
Non-directory information is information that is not considered to be directory information, such as enrollment records, grades, schedules.

Student may choose to withhold release of directory information. A student may do so by completing the “Request for Confidentiality of Directory Information” form at http://www.utdallas.edu/student.registrar/forms/ (click on ‘FERPA packet’).

More information regarding FERPA can be found at http://www.ed.gov/policy/gen/guid/fpco/.

**Honors Programs**

**Collegium V**

The University offers a 4-year comprehensive program of enrichment and recognition, known as Collegium V, for outstanding students. Collegium V includes special seminar-style classes offered by selected University professors as well as a program of extracurricular activities designed to encourage and reward exceptional academic achievement. Benefits available to participants in Collegium V include registration for Honors seminars, honors advising, 24-hour access to the Collegium V lounge complex, research and internship opportunities with professors, and an agenda of cultural events such as concerts, exhibits, speakers, and plays.

Membership in Collegium V is limited. Interested students must apply directly to the program at:

The Office of Undergraduate Education – MP16
ATTN: Collegium V
The University of Texas at Dallas
PO Box 830688
Richardson TX 75083-0688
(972) 883-4297

**Honors in the Major**

Each school offers qualified students the opportunity to participate in an honors program within their discipline. Each program provides two levels of recognition, Honors and Distinction. All students must have completed a minimum of 30 graded semester credit hours to qualify for major honors. The requirements for major honor’s recognition vary across schools. Students should review the descriptions within the school section of the catalog.

**Other Degree Requirements**

**Double Degree**

To qualify for a double degree, a student must complete all of the requirements for both degrees as stated in the catalog, plus 30 semester credit hours of upper-division (3000/4000) courses beyond those for the degree with the greater credit requirements for a minimum of 81 upper-division semester credit hours.

**Double Major**

With the approval of the relevant Associate Dean, students may complete a double major by satisfying all requirements set by each program. This shall include no fewer than 12 semester credit hours at the University in each major field.

If the two majors lead to a B.A. and a B.S., the student must choose which baccalaureate will appear on the degree. Double majors in Interdisciplinary Studies are not available.

For information concerning honors, please see “Graduation with Honors,” page 32.
Incoming Freshmen

All students coming to The University of Texas at Dallas directly from high school must complete RHET 1101, Oral Communication/Critical Thinking, preferably during their first semester in attendance. Prior experience as a full-time student in college or many years in the work force may be a suitable substitute to RHET 1101. The Associate Dean of Undergraduate Education or the Undergraduate Dean may waive this requirement based on a student’s prior experiences. This small group class focuses on the most important aspects of adapting to college. Students take part in discussions and demonstrations related to personal management, motivation, academic skills and work habits, communication skills and social relationships. Specific exercises promote critical thinking and creative planning. RHET 1101 contributes to the elective requirements within a student’s degree plan.
Graduate Programs

The University of Texas at Dallas has had a program of graduate study and research since the establishment of its predecessor, the Southwest Center for Advanced Studies. The nature of this pursuit has ranged widely, from the key instrumentation of lunar exploration to a search for new energy sources, to problems in the biochemical repair of animal cells.

This legacy of teaching and research has continued in new graduate areas as the University has grown to meet the educational and societal needs of the times. Some of the programs are interdisciplinary in nature; others reflect a single area of study.

Students entering at any level are urged to consider the opportunities afforded by accelerated Fast Track programs leading to degrees at the master’s level. Early preparation for such advanced work is the key to swift progress. Such Fast Track programs often utilize graduate courses in a student’s undergraduate degree plan; see page 30 for taking graduate courses while still an undergraduate.

Graduate degrees currently offered include:

**School of Arts and Humanities**

- Humanities (M.A., M.A.T., Ph.D.) with majors in
  - Aesthetic Studies
  - History of Ideas
  - Humanities
  - Studies in Literature
  - Fast Track B.A./M.A. available

**School of Behavioral and Brain Sciences**

- Applied Cognition and Neuroscience (M.S.) Fast Track B.S./M.S. available
- Audiology (Au.D.)
- Communication Disorders (M.S.) Fast Track B.S./M.S. available
- Human Development and Communication Sciences (Ph.D.)
- Human Development and Early Childhood Disorders (M.S.) Fast Track B.S./M.S. available

**School of Economics, Politics and Policy Sciences**

- Economics (M.S.) Fast Track B.S./M.S. available
- Applied Sociology (M.S.) Fast Track B.A. or B.S. or M.S. available
- Economics (Ph.D.)
- Geospatial Information Sciences (M.S.) Fast Track B.S./M.S. available
- Political Science (Ph.D.)
- Public Policy and Political Economy (Ph.D.)
- Public Affairs (MPA) Fast Track B.A. /MPA and B.S. /MPA available

**Erik Jonsson School of Engineering and Computer Science**

- Computer Engineering (M.S., Ph.D.) Fast Track B.S.C.S./M.S.C.E. available
- Computer Science (M.S., Ph.D.)
  - Fast Track B.S.C.S. /M.S.C.S. with major in SE available
- Electrical Engineering (M.S.E.E., Ph.D.) Fast Track B.S.E.E. /M.S.E.E. available
- Software Engineering (M.S.C.S. with major in SE, Ph.D.)
  - Fast Track B.S.S.E. /M.S.C.S. with major in SE available
- Telecommunications Engineering (M.S.T.E.) Fast Track B.S.T.E. /M.S.T.E. available

**School of General Studies**

- Interdisciplinary Studies (M.A.)
School of Management
Accounting and Information Systems (M.S.) Fast Track B.S. /M.S. available
Business Administration (MBA) Fast Track B.S. /MBA available
Information Technology and Management (M.S.)
International Management Studies (M.A., Ph.D.)
Management and Administrative Sciences Fast Track (Finance Concentration) B.S. /M.S. available
Management Science (Ph.D.)
Medical Management (M.S.)

School of Natural Sciences and Mathematics
Applied Physics (M.S.)
Biotechnology (M.S.)
Chemistry (M.S., Ph.D.) Fast Track B.S. /M.S. available
Geosciences (M.S., Ph.D.) Fast Track B.S. /M.S. and B.S. /M.S.G.I.S. available
Mathematical Sciences (M.S.) Fast Track B.S. /M.S. available with majors in
  Applied Mathematics (M.S., Ph.D.)
  Engineering Mathematics (M.S.)
  Mathematics (M.S.)
  Statistics (M.S., Ph.D.)
    Mathematics Education (M.A.T.)
Molecular and Cell Biology (M.S., Ph.D.) Fast Track B.S. /M.S. available
Physics (M.S., Ph.D.) Fast Track B.S. /M.S. available
Science Education (M.A.T.)

For additional information in planning a graduate career at The University of Texas at Dallas, please refer to the University’s graduate catalog.

Undergraduate Programs

Programs are listed in alphabetical order under the school headings: Arts and Humanities, Behavioral and Brain Sciences, Economics, Political and Policy Sciences, Engineering and Computer Science, General Studies (including Teacher Education), Management, and Natural Sciences and Mathematics. These are followed by course listings for Developmental Courses, Interdisciplinary Studies, and Physical Instruction. Course descriptions for Core Curriculum courses are under the headings of the programs offering the courses. An alphabetical list of all undergraduate classes is included separately.

The degree requirements for each program are presented in the same format. There are course requirements in three broad areas: Core Curriculum, program major, and electives. Each program will recommend specific courses to be used in meeting core curriculum requirements. Under major requirements, each program lists the required major preparatory courses, major core courses to be taken by all students, and major related courses. The related courses section defines options or concentrations within the major. Elective requirements vary by program but all students are required to complete six hours of advanced electives.
School of Arts and Humanities

Faculty


Associate Professors: Pamela Gossin, Ming Dong Gu, Midori Kitagawa, Patricia H. Michaelson, Robert Nelsen, John J. Pomara, Nils Roemer, Dean Terry, Marilyn Waligore, Daniel B. Wickberg, Michael L. Wilson

Assistant Professors: Susan Briante, Sean J. Cotter, Frank Dufour, Monica Evans, J. Michael Farmer, Todd Fechter, Charles Hatfield, Fabrice Jotterand, Michelle Nickerson, Peter Park, David Parry, Monica Rankin, Venus O. Reese, Natalie J. Ring, Scott Swearingen, Charissa Terranova

Senior Lecturers: John F. Barber, Bruce Barnes, Elizabeth Bell, Kelly P. Durbin, Maria Engen, Kathryn C. Evans, John Fowler, John Gooch, Dianne Goode, Michele Hanlon, Janet Johnson, Tom M. Lambert, Kathy Lingo, Mary Medrick, Greg L. Metz, Monica M. Saba, Betty H. Wiesepape

Research Associates: Thomas Bywaters, Dennis Walsh

Emeritus Professors: Joan Chandler, Esteban R. Egea, S. Michael Simpson, Gerald L. Soliday, Deborah Stott

The School of Arts and Humanities offers baccalaureate degrees in Art and Performance, Historical Studies, Literary Studies, Arts and Humanities, and Arts and Technology. The first three majors integrate traditional courses of study in the studio arts and theatre; history and philosophy; and American, English, Spanish, and other literatures. The fourth integrates elements of the other three majors.

The Arts and Technology degree emphasizes the mutually productive interaction of technology with the arts, with specific emphasis on the interplay of visual art, music, and narrative with the new modes of expression and communication that have emerged from the convergence of computing and media technologies. The program stresses not only the creation but also the potential applications and cultural implications of interactive media.

Students in the School of Arts and Humanities are encouraged to explore the boundaries and the interrelationships of the major fields of study within the school. Consistent with this focus on the integration of the arts and humanities and a commitment to interdisciplinary education, the school has no conventional departments. Rather, its curriculum is designed to allow study that crosses and transforms traditional disciplinary lines.

Each student in the school consults regularly with an advisor, who helps the student design an integrated program of coursework. At least 42 semester hours of upper-division course work of the total of 51 upper-division hours required to complete the B.A. are completed within the major and related fields.* All students complete a 3-hour core course (HUMA 3300) that introduces the methods, strategies, and theories of inquiry and interpretation that are elaborated in subsequent arts and humanities courses.** In addition to HUMA 3300, students complete either 3, 6, or 12 hours of core course work (depending on the major selected), a series of major requirements and electives, and the remaining hours in related course work from within the School of Arts and Humanities. Students may use Interdisciplinary Studies courses and electives to complement and enrich their programs of study.

*The Arts and Technology Major requires only 39 semester hours in required upper division course work and prescribed electives.

**HUMA 3300 is not required of Arts and Technology Majors

Teacher Certification

Students interested in teaching in secondary schools can achieve Texas Teacher Certification in English and/or History and/or Composite Social Studies as part of their majors in either Literary Studies or Historical Studies. Immediately after being admitted to the University, interested students should meet with an advisor in the Teacher Development Center to receive a certification plan and with an Arts and Humanities adviser in Literary Studies or Historical Studies to receive a degree plan. Further details may be found in the Teacher Education section of the catalog.
Fast Track Baccalaureate/Master’s Degrees
The Fast Track program is designed to permit exceptional undergraduate students in Arts and Humanities majors to begin work on the master’s degree before graduation.

Qualified seniors at U.T. Dallas, who have completed at least 30 hours of upper-division work and the core courses in their major, may take up to 12 credit hours of approved graduate courses in Arts and Humanities during their senior year and apply these hours to their undergraduate degree plans as either major and related courses or electives. After admission to the graduate program, up to 12 graduate hours may be used to complete the bachelor’s degree and also to satisfy requirements for the Master’s degree.

For further information on the Fast Track program, see the Associate Dean for Undergraduate Education of the School of Arts and Humanities.

Minors
To minor in the Arts and Humanities, students must take a minimum of 18 hours for the minor, 12 of which must be upper-division hours. Core courses offered by the school may count as lower-division hours toward the minor. Students may choose to minor in any of the following fields of study:

- Art History
- Creative Writing
- History
- Literature
- Medical and Scientific Humanities
- Music
- Performing Arts
- Philosophy
- Visual Arts

Students may contact their academic advisor for a list of the courses that satisfy each minor.

Related Minor Areas:
Minor in Gender Studies (18 hours)
The Gender Studies minor is 18 semester hours. The courses consist of GST 2300, two other Gender Studies core courses, and nine hours of approved Gender Studies electives.

Minor in Spanish/Hispanic Area Studies (18 hours)
Six semester hours of college-level Spanish (may include Beginning Spanish) and at least six semester hours in courses in the School of Economic, Political and Policy Sciences, to be chosen from the following: ECO 4360, ECO 4362, ECO 4396, GOVT 3328, GOVT 3350, SOC 4396, and six hours of such courses in the School of Arts and Humanities, to be chosen from the following: HIST 3358, HIST 4359, HIST 4376, HIST 4V71, LIT 3385, LIT 4V71, SPAN 3360, SPAN 3361, SPAN 3364.

Arts and Humanities Core Course
HUMA 3300 Reading and Writing Texts (3 semester hours) Focuses on a significant topic or issue through which students are offered an opportunity to gain experience in various analytic and interpretive approaches. Explores connections among artistic and intellectual endeavors appropriate to a range of courses in the Arts and Humanities. Prerequisite: HUMA 1301 or equivalency. This course is a requirement for all AH, AP, HIST, and LIT majors and should be taken prior to completing the first 12 hours of upper-division course work. (3-0) S
Art and Performance (B.A.)

Students who complete the major in Art and Performance (AP) pursue an interdisciplinary study of the arts by selecting among courses in historical context, studio practice, performance ensemble, creative writing, and ideas and interpretation of the arts. In the AP core course, students will experience the theory and practice of the arts in a workshop setting and, in studio or ensemble courses, will gain practical experience in at least one area of the visual or performing arts or creative writing. Courses in the historical context and interpretation of the arts will enable students to understand how style, subject matter, and materials may respond to different motivations and purposes. In their selection of required and elective courses, students are encouraged to focus their coursework around one of the following areas: art history (early or modern period), two-dimensional or three-dimensional studio art, creative writing, art and technology (computer imaging, photography, video art), or music/theatre/performance.

Since the following catalog course descriptions are very general, students are urged to consult the detailed course descriptions available on the web site for the School of Arts and Humanities.

Unless otherwise noted, courses in Art and Performance are open to all students in the University.

Bachelor of Arts in Art and Performance

Degree Requirements (120 hours)

I. Core Curriculum Requirements\(^1\): 42 hours
   A. Communication (6 hours)
      3 hours Communication (RHET 1302)
      3 hours Communication Elective (HUMA 3300)
   B. Social and Behavioral Sciences (15 hours)
      6 hours Government (GOVT 2301 and 2302)
      6 hours American History
      3 hours Social and Behavioral Science Elective
   C. Humanities and Fine Arts (6 hours)
      3 hours Fine Arts (ARTS 1301)
      3 hours Humanities (HUMA 1301)
   D. Mathematics and Quantitative Reasoning (6 hours)
      3 hours College Math (MATH 1314 is recommended)
      3 hours Quantitative Mathematics (STAT 1342)
   E. Science (9 hours including at least one course with a substantial laboratory component)

\(^1\)Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements, Lower Division: 3 hours
    One of the following:
    - AHST 2331 Understanding Art
    - DANC 1310 Understanding Dance
    - DRAM 1310 Understanding Theater
    - FILM 2332 Understanding Film
    - MUSI 1306 Understanding Music

III. Major Requirements, Upper Division: 42 hours

Major Core Courses (6 hours)
- AP 3300 Elements of Art and Performance
- HUMA 3300 Reading and Writing Texts\(^2\)

Major Distribution and Elective Courses (24 hours)
- 3 hours upper-division Historical Context courses
- 6 hours of upper-division courses from Studio and Ensemble courses
- 15 hours of upper-division Art and Performance electives
Major-Related Courses (12 hours)
Students may select any combination of upper-division courses in Historical Studies, Philosophy and/or Literature and Language.

2 A required Major course that also fulfills a Core Curriculum requirement. If the course is counted in the Core Curriculum, the student takes an additional 3 hours of elective credit.

IV. Elective Requirements: 36 hours
Advanced Electives (6 hours)
Students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division courses that have prerequisites.
Free Electives (30 hours)
Both upper- and lower-division courses may be used as electives, but students must complete at least 51 hours of upper-division credit to qualify for graduation.

Historical Studies (B.A.)
Students who complete the major in Historical Studies may design distinctive degree programs by selecting among courses in historical and philosophical methods and approaches, traditional historical surveys, and specific historical and philosophical topics. Students are encouraged to focus their work in Historical Studies on a particular time or place, a significant theme, topic, or problem, or an approach to learning such as literature, the arts, ideas, science and technology, or the social sciences. Students may also be certified to teach history and/or social studies and/or English.

Since the following catalog course descriptions are very general, students are urged to consult the detailed course descriptions available on the web site for the School of Arts and Humanities.

Courses in Historical Studies are open to all students in the university.

Bachelor of Arts in Historical Studies
Degree Requirements (120 hours)

I. Core Curriculum Requirements1: 42 hours
   A. Communication (6 hours)
      3 hours Communication (RHET 1302)
      3 hours Communication Elective (HUMA 3300)
   B. Social and Behavioral Sciences (15 hours)
      6 hours Government (GOVT 2301 and 2302)
      6 hours American History
      3 hours Social and Behavioral Science Elective
   C. Humanities and Fine Arts (6 hours)
      3 hours Fine Arts (ARTS 1301)
      3 hours Humanities (HUMA 1301)
   D. Mathematics and Quantitative Reasoning (6 hours)
      3 hours College Math (MATH 1314 is recommended)
      3 hours Quantitative Mathematics (STAT 1342)
   E. Science (9 hours including at least one course with a substantial laboratory component)

1Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements, Lower Division: 3 hours
   PHIL 1301 Introduction to Philosophy or equivalent

III. Major Requirements, Upper Division: 42 hours
   Major Core Courses (6 hours)
HIST 3301 Historical Inquiry
HUMA 3300 Reading and Writing Texts

Major Distribution and Elective Courses (24 hours)
3 hours of upper-division courses from each of the following groups:
   European Historical Studies
   Asian, African, and Latin American Historical Studies
   Studies in Philosophy and Intellectual History
   Historical Studies with content before 1800
12 hours of upper-division Historical Studies electives

Major-Related Courses (12 hours)
Students may select any combination of upper-division courses in Art and Performance, Art History, Arts, Communications, Creative Writing, Dance, Drama, Film Studies, Literature and Language, and/or Music.

A required Major course that also fulfills a Core Curriculum requirement. If the course is counted in the Core Curriculum, the student takes an additional 3 hours of elective credit.

IV. Elective Requirements: 33 hours

Advanced Electives (6 hours)
Students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division courses that have prerequisites.

Free Electives (27 hours)
Both upper- and lower-division courses may be used as electives, but students must complete at least 51 hours of upper-division credit to qualify for graduation.

Literary Studies (B.A.)

Students who complete the major in Literary Studies receive a thorough grounding in literary ideas and methods as well as a broad acquaintance with literatures of different periods and cultures, including literature in translation. Courses in this major are divided into the following groups: Literary Genres, English and American Literature, General Literature Courses, and Foreign Languages and Literatures. By selecting courses from a variety of these headings, students are able to combine courses in criticism and interpretation, in writing and translation, and in linguistics and languages. Students may also be certified to teach English and/or history and/or social studies.

Since the following catalog course descriptions are very general, students are urged to consult the detailed course descriptions available on the web site for the School of Arts and Humanities.

Unless otherwise noted, courses in Literary Studies are open to all students in the university. However, students majoring in Literary Studies should take LIT 2341 Literary Analysis as a pre- or corequisite for all other Literary Studies courses except LIT 3300.

Bachelor of Arts in Literary Studies

Degree Requirements (120 hours)

I. Core Curriculum Requirements: 42 hours

   A. Communication (6 hours)
      3 hours Communication (RHET 1302)
      3 hours Communication Elective (HUMA 3300)
   B. Social and Behavioral Sciences (15 hours)
      6 hours Government (GOVT 2301 and 2302)
      6 hours American History
      3 hours Social and Behavioral Science Elective
   C. Humanities and Fine Arts (6 hours)
      3 hours Fine Arts (ARTS 1301)
      3 hours Humanities (HUMA 1301)
D. Mathematics and Quantitative Reasoning (6 hours)
   3 hours College Math (MATH 1314 is recommended)
   3 hours Quantitative Mathematics (STAT 1342)
E. Science (9 hours including at least one course with a substantial laboratory component)

1Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements, Lower Division: 3 hours
   LIT 2341 Literary Analysis

III. Major Requirements, Upper Division: 42 hours
   Major Core Courses (6 hours)
   HUMA 3300 Reading and Writing Texts
   LIT 3300 Western Literary Tradition
   Major Distribution and Elective Courses (24 hours)
   3 hours of upper-division courses from each of the following groups:
      Literary genres
      Literature before 1850
      18 hours of upper-division Literary Studies electives
   Major-Related Courses (12 hours)
   Students may select any combination of upper-division courses from Art and Performance, Art History, Arts, Communications, Creative Writing, Dance, Drama, Film Studies, Historical Studies, Music and/or Philosophy.

2A required Major course that also fulfills a Core Curriculum requirement. If course is counted in the Core Curriculum, the student takes an additional 3 hours of elective credit.

IV. Elective Requirements: 33 hours
   Advanced Electives (6 hours)
   Students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division courses that have prerequisites.
   Free Electives (27 hours)
   Both upper- and lower-division courses may be used as electives, but students must complete at least 51 hours of upper-division credit to qualify for graduation.

Arts and Humanities (B.A.)
Students who complete the major in Arts and Humanities are familiar with the relationships among the liberal disciplines which comprise literary and historical studies and the visual and performing arts.

Since the catalog course descriptions are very general, students are urged to consult the detailed course descriptions available on the web site for the School of Arts and Humanities.

Bachelor of Arts in Arts and Humanities
Degree Requirements (120 hours)

I. Core Curriculum Requirements1: 42 hours
   A. Communication (6 hours)
      3 hours Communication (RHET 1302)
      3 hours Communication Elective (HUMA 3300)
   B. Social and Behavioral Sciences (15 hours)
      6 hours Government (GOVT 2301 and 2302)
      6 hours American History
      3 hours Social and Behavioral Science Elective
   C. Humanities and Fine Arts (6 hours)
III. Major Requirements, Upper Division: 42 hours

Major Core Courses (12 hours)
- AP 3300 Elements of Art and Performance
- HIST 3301 Historical Inquiry
- HUMA 3300 Reading and Writing Texts\(^1\)
- LIT 3300 Western Literary Tradition

Major Distribution and Elective Courses (27 hours)

Art and Performance (9 hours)
- One upper-division course from Historical Context courses
- Two upper-division courses from Studio and Ensemble courses

Historical Studies (9 hours)
- One upper-division course from each of the following groups:
  - European Historical Studies
  - Asian, African, and Latin American Historical Studies
  - Studies in Philosophy and Intellectual History

Literary Studies (9 hours)
- One upper-division course from each of the following groups:
  - Literary genres
  - Literature before 1850
  - LIT elective

Arts and Humanities Elective (3 hours)
- Any upper-division course from the School of Arts and Humanities

\(^1\) A required Major course that also fulfills a Core Curriculum requirement. If the course is counted in the Core Curriculum, the student takes an additional 3 hours of elective credit.

IV. Elective Requirements: 27 hours

Advanced Electives (6 hours)
- Students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division courses that have prerequisites.

Free Electives (21 hours)
- Both upper- and lower-division courses may be used as electives, but students must complete at least 51 hours of upper-division credit to qualify for graduation.
**Arts and Technology (B.A.)**

Students who complete the major in Arts and Technology receive a thorough grounding in the mutually productive interaction of technology with the arts, with specific emphasis on the interplay of visual art, music, and narrative with the new modes of expression and communication that have emerged from the convergence of computing and media technologies. The program stresses not only the creation but also the potential applications and cultural implications of interactive media. A student majoring in Arts and Technology will be required to channel selected coursework according to individual needs and specialties. Particular attention should be given to the Prescribed Electives for the major, and close consultation with academic advisors is recommended. By selecting courses from a variety of the remaining elective headings, students are able to combine courses in technology and fine arts with course work in literary criticism and interpretation, creative writing and translation, and linguistics and languages.

Unless otherwise noted, courses in Arts and Technology are open to all students in the university. However, students majoring in Arts and Technology may be given preference in certain course enrollments.

**Bachelor of Arts in Arts and Technology**

**Degree Requirements (120 hours)**

<table>
<thead>
<tr>
<th>I. Core Curriculum Requirements*: 42 hours</th>
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<tbody>
<tr>
<td>A. Communication (6 hours)</td>
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<tr>
<td>3 hours Communication (RHET 1302)</td>
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<tr>
<td>3 hours Communication Elective (ATEC 3320 or ATEC 3325)</td>
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<tr>
<td>B. Social and Behavioral Sciences (15 hours)</td>
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<tr>
<td>6 hours Government (GOVT 2301 and 2302)</td>
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<td>6 hours American History</td>
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<tr>
<td>3 hours Social and Behavioral Science Elective</td>
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<tr>
<td>C. Humanities and Fine Arts (6 hours)</td>
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<td>3 hours Fine Arts (FILM 2332)</td>
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<td>3 hours Humanities (HUMA 1301)</td>
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<td>D. Mathematics and Quantitative Reasoning (6 hours)</td>
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<td>3 hours College Math (MATH 1314 is recommended)</td>
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<tr>
<td>3 hours Quantitative Mathematics (STAT 1342)</td>
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<td>E. Science (9 hours including at least one course with a substantial laboratory component)</td>
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*Cursus Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

<table>
<thead>
<tr>
<th>II. Major Requirements, Lower Division: 21 hours</th>
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<tbody>
<tr>
<td>ARTS 1316 Drawing Foundations</td>
</tr>
<tr>
<td>ARTS 2380 2D Design Foundations</td>
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<tr>
<td>ATEC 2320 Introductory Topics in Arts and Technology</td>
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<tr>
<td>ATEC 2382 Computer Imaging</td>
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<tr>
<td>ATEC 2384 Basic Design Principles and Practices</td>
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<tr>
<td>CS 1337 Computer Science I</td>
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<td>CS 2336 Computer Science II</td>
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<tr>
<th>III. Major Requirements, Upper Division: 21 hours</th>
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<tbody>
<tr>
<td>ARTS 3371 Black and White Photography</td>
</tr>
<tr>
<td>or ARTS 3372 Color Photography</td>
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<tr>
<td>or ARTS 3374 Technical Photography</td>
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<tr>
<td>or ARTS 3377 Digital Photography</td>
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<tr>
<td>ATEC 3317 3D Modeling for Computer Animation</td>
</tr>
<tr>
<td>ATEC 4340 Business and the Digital Arts</td>
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<tr>
<td>ATEC 4380 Capstone Project</td>
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<tr>
<td>CS 3333 Data Structures</td>
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</tbody>
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School of Arts and Humanities

- or CS 3335 C and C++
- or CS 3375 Principles of UNIX
- or CS 4336 Advanced Java

HIST 3337 Technology and Western Civilization
- or HIST 3374 American Technological Development

LIT 3334 Literature of Science
- or LIT 3311 The Literature of Science Fiction and Fantasy
- or HIST 3328 History and Philosophy of Science and Medicine

IV. **Elective Requirements: 36 hours**

**Prescribed Electives (15 hours)**
- Any five of the following:
  - AHST 3318 Contemporary Art
  - ATEC 3327 Digital Lighting and Texturing for Computer Animation
  - ATEC 3330 Digital Video Production
  - ATEC 3351 Computer Game Development
  - ATEC 3352 Computer Game Design
  - ATEC 3361 Internet Studio
  - or ATEC 3363 Basic Interaction Design
  - ATEC 3365 Virtual Environments
  - ATEC 4337 Computer Animation
  - ATEC 4345 Motion Capture Animation
  - ATEC 4346 Story-Telling for New Media
  - ATEC 4347 Advanced Design
  - ATEC 4348 Advanced 3D Modeling
  - ATEC 4349 Advanced Lighting and Texturing
  - ATEC 4357 Advanced Digital Arts
  - ATEC 4367 Advanced Computer Game Development
  - ATEC 4370 Topics in Arts and Technology
  - ATEC 4371 Topics in Animation
  - ATEC 4373 Topics in Game Development
  - ATEC 4374 Topics in Digital Design
  - ATEC 4375 Topics in Sound Design
  - MUSI 3389 Digital Music II

**Advanced Electives (6 hours)**

Students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division courses that have prerequisites.

**Free Electives (15 hours)**

Both upper- and lower-division courses may be used as electives, but students must complete at least 51 hours of upper-division credit to qualify for graduation.
School of Behavioral and Brain Sciences

The School of Behavioral and Brain Sciences at The University of Texas at Dallas offers degrees in Child Learning and Development; Cognitive Science; Neuroscience; Psychology; and Speech-Language Pathology and Audiology. The Child Learning and Development program provides students a research-based approach to understanding child development as a preparation for careers as teachers, researchers, service providers, and policy makers. The Cognitive Science program provides a multidisciplinary approach to the study of the mind and behavior that incorporates methodology from the fields of philosophy, psychology, neuroscience, and computer science. The Neuroscience program provides students the opportunity to study the nervous system from a multidisciplinary approach that combines the study of brain structure, biochemistry, and physiology, and their links to behavior. The Psychology program provides basic training in the study of mind and behavior as preparation for graduate training in psychology, counseling and related fields, as well as providing courses which may be relevant to employment in human resources or research support positions. The Speech-Language Pathology and Audiology program offers study in the processes and disorders of speech, language, and hearing. The program provides the foundation for graduate work leading to careers as a speech-language pathologist or audiologist. Students meeting B.S. degree and clinical practicum requirements are eligible for Texas state licensure as a speech-language pathology assistant.

The School of Behavioral and Brain Sciences offers a number of services and programs for students. Contact the Associate Dean’s office for more information. The school provides Advising and Mentoring, including professional Academic and Career Advising along with Faculty and Peer Mentors. The Career Paths Program helps students establish their own career paths. It integrates career exploration, individualized career planning, internships, preparation for graduate school and post-graduation placement. Students should sign up for the program in the Associate Dean’s office and watch for scheduled talks, workshops and fairs. The school Internship Placement Program is open to all students who have reached junior or senior standing (more than 53 hours). Students earn course credit for working 8 hours per week at an approved community agency of their choice. The program has over 70 established placement sites. Students keep daily job diaries, attend one class meeting per month, and write brief papers relevant to their experiences.

The School Honors Program in the School of Behavioral and Brain Sciences provides eligible students with opportunities for in-depth experience in research and writing while working individually with members of the faculty. These opportunities enhance preparation for graduate school and employment in the student’s chosen field. To earn BBS School Honors, students must graduate with (a) at least 30 graded hours at UTD, (b) at least 12 hours in Psychology major core courses, (c) have an overall UTD GPA of 3.40 or better, (d) pass the Honors Seminar (which is currently taught only in the spring semester), and (e) complete an honors thesis with a grade of at least B+. School Honors with Distinction will be awarded to students whose thesis is judged by a faculty committee to be of exemplary quality. Students apply for admission to the program in the Associate Dean’s office after completing at least 15 semester credit hours at UTD, including two major core courses, with a GPA of at least 3.40.

Faculty


Associate Professors: Marco Atzori, Lawrence J. Cauller, William F. Katz, Michael Kilgard, Daniel Krwczyk, Teresa Nezworski, Pamela Rollins, Bart Ryyna, Lucien T. Thompson,

Assistant Professors: Shayla Holub, Daniel Krwczyk, Jeffrey S. Martin, Mandy McGuire, Christa McIntyre, Candice Mills

Clinical Lecturers: Michelle Aldridge, Cheryl L. Bryant, Lucinda Dean, Mary Dodd, Sara Haynes, Karen Kaplan, Helen Kenedi, Janice Lougeay, Carolyn Musket, Felicity Sale

Distinguished Scholar in Residence: James Jerger

Senior Lecturer: Betty G. Edelman, Matthew Housson, Karen Huxtable-Jester, Nancy Juhn, Toosje Vanbeveren

Child Learning and Development (B.S.)

Providing better ways to foster the intellectual and emotional development of all of our children is a national priority. As such, well-educated university graduates are needed to go on to become expert child development practitioners and researchers. Over the last 60 years, the academic disciplines of developmental psychology and child development have accumulated a vast body of
research-based knowledge about the factors that promote optimal child learning, development and well-being, as well as those that contribute to disadvantaged child development. The Child Learning and Development major provides undergraduate students a rigorous science-based curriculum that immerses them in the theories, findings, research methods, and best-practices that the scientific study of child development has to offer.

The Child Learning and Development major focuses on the fundamental processes of child and adolescent development within the contexts of families, schools, peer groups, and larger cultural milieu. Its three objectives are to provide students with a strong foundation in 1) cognitive, language, and socio-emotional development, 2) research skills for conducting scientific studies and evaluating applied programs, and 3) translating scientific findings into practical applications for understanding and improving children’s lives. Opportunities for supervised and independent research, as well as field placements that involve working with children, families, schools, and social services, are provided in addition to formal work.

The Child Learning and Development major prepares students for a wide range of careers in education, psychology, social work, family medicine, public health, family law, and public policy. The major is especially well suited for students seeking elementary teacher certification (early childhood – 6th grade) through UTD’s Teacher Development Center. By combining a major in Child Learning and Development with elementary teacher certification, students will develop a strong foundation in child development and teaching. Elementary Teacher Certification requires a minimum of 45 additional hours of course work that can be completed within the free elective hours of the Child Learning and Development major. If you are interested in this combined child development/education program (called CLD/EC6), see an advisor to develop a degree plan.

Bachelor of Science in Child Learning and Development
Degree Requirements (120 hours)

I. Core Curriculum Requirements: 42 hours
   A. Communication (6 hours)
      3 hours Communication (RHET 1302)
      3 hours Communication Elective (CLDP 3394)
   B. Social and Behavioral Sciences (15 hours)
      6 hours Government (GOVT 2301 and 2302)
      6 hours American History
      3 hours Social and Behavioral Science Elective (PSY 2301)
   C. Humanities and Fine Arts (6 hours)
      3 hours Fine Arts (recommend ARTS 1301)
      3 hours Humanities (recommend HUMA 1301)
   D. Mathematics and Quantitative Reasoning (6 hours)
      3 hours College Math (recommend MATH 1306, 1314 or 2417)
      3 hours Quantitative Methods or Math (PSY 2317)
   E. Science (9 hours)
      3 hours Science (recommend NSC 3361 or CGS 2301)
      6 hours Science Electives (including at least one course with a substantial laboratory component)

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: 37 hours including at least 30 upper-division hours of required and guided elective courses in the major (28 hours beyond Core Curriculum)
   Major Preparatory Courses: 6 hours
      PSY 2301 Introduction to Psychology (also satisfies 3 hours part B of Core Curriculum)
      PSY 2317 Statistics for Psychology (also satisfies 3 hours part D of Core Curriculum)
      or STAT 1342 Statistical Decision Making (also satisfies 3 hours part D of Core Curriculum)
   Major Core Courses: 21 hours
      CLDP 3194 Research and Evaluation Laboratory (taken with CLDP 3394)
      CLDP 3303 Normal Language Development
      CLDP 3310 Child Development
      or CLDP 3339 Educational Psychology
or CLDP 4334 Lifespan Development
CLDP 3332 Social and Personality Development
CLDP 3342 Exceptional Children
  or CLDP 4344 Child Psychopathology
CLDP 3362 Cognitive Development
  or CLDP 3365 Child Learning
CLDP 3394 Research and Evaluation Methods (also satisfies 3 hours part A of Core Curriculum)
CLDP 4394 Internship
  or CLDP 4395 Co-op Fieldwork
  or CLDP 4397 Honors Thesis
  or CLDP 4V98 Directed Research

Major Guided Electives (9 hours)
Any 9 hours of courses with CLDP prefix or any of the following courses: CGS 2301, CGS 3342, CGS 4312, CGS 4313, CGS 4314, CGS 4315, CGS 4352, CGS 4353, ED 4352, ED 4355, ED 4357, NSC 3345, NSC 4352, NSC 4353, NSC 4354, NSC 4356, PSY 3331, PSY 3333, PSY 3361, PSY 4331, PSY 4343, PSY 4362, PSY 4364, PSY 4373, SPAU 3301, SPAU 3304, SPAU 3340, SPAU 3343, SPAU 3344, SPAU 3345 or SPAU 4308.

2 A required Major course that also fulfills a Core Curriculum requirement.

III. Elective Requirements: 50 hours
Advanced Electives (6 hours):
Six hours of upper-division courses which do not have a CLDP prefix.
Free Electives (44 hours)
Students are encouraged to explore areas of concentration in Child Learning and Development as well as explore interests outside the field. Be aware that at least 51 hours of upper division credit hours are required for graduation.

Minor in Child Learning and Development
This minor is well suited for students pursuing Elementary Teacher certification and for those generally interested in the psychological development of children. Students must complete 18 credit hours including 9 required hours of foundation coursework and 9 credit hours of guided electives. At least 12 hours must be upper-division courses, of which at least 9 hours must have been completed at UTD. Students majoring in Psychology or Speech-Language Pathology and Audiology may minor in Child Learning and Development provided that no course is used to satisfy both major and minor requirements.

Foundation Courses (9 hours required)
PSY 3310 Child Development
  or PSY 3339 Educational Psychology
  or PSY 4334 Lifespan Development
PSY 3332 Social and Personality Development
PSY 3362 Cognitive Development

Guided Electives Courses (select 9 hours)
PSY 3342 Exceptional Children
PSY 4344 Child Psychopathology
PSY 4373 Psychological Assessment
PSY 4394 Internship in Psychology
  or ED 4693 Student Teaching Grades EC - 6 (approval of Associate Dean required)
SPAU 3303 Normal Language Development
SPAU 4308 Language Disorders in Children

Other courses as approved by the Associate Dean

*PSY majors take an additional 3 hours of guided electives to replace PSY 3310 or PSY 4334.
1 Required for EC-4 Teacher Certification.
Cognitive Science (B.S.)

Cognitive science is the study of complex information processing in humans and machines and includes the multidisciplinary study of biological and artificial systems. The field of cognitive science draws from diverse approaches to understanding these processes, including research from experimental psychology, neuroscience, linguistics, computer science, mathematics, and engineering. Cognitive scientists believe that the design of artificially intelligent computer systems can benefit from a better understanding of human psychology and neuroscience. Likewise, our understanding of human thought and behavior can be informed by a better understanding of work in the area of artificial intelligence, computer science, and mathematical modeling. In addition to providing a sound preparation for graduate work in Cognitive Science and related areas, the Cognitive Science major is an ideal choice for students pursuing careers that combine interests in neuroscience, cognition, mathematics, and computer science. There are exciting career prospects in both industry and academics. For example, the Human Computer Interaction specialization area provides students with a unique set of skills in both software engineering and behavioral science research methods that can prepare students for careers involving the evaluation and design of user-friendly software interfaces. The Intelligent Systems specialization area provides students with a unique background in mathematical modeling, computer programming, psychology, and neuroscience which can prepare students for careers associated with the development and implementation of intelligent systems (e.g., web search engine design, speech recognition technology, computer vision, and computer games).

Students can complete Core Curriculum and Cognitive Science major requirements in a minimum of 78 semester credit hours, leaving 42 elective hours.

Bachelor of Science in Cognitive Science

Degree Requirements (120 hours)

I. Core Curriculum Requirements1: 42 hours
   A. Communication (6 hours)
      3 hours Communication (RHET 1302)
      3 hours Communication Elective (CGS 3340 or PSY 3393)2
   B. Social and Behavioral Sciences (15 hours)
      6 hours Government (GOVT 2301 and 2302)
      6 hours American History
      3 hours Social and Behavioral Science Elective (PSY 2301)2
   C. Humanities and Fine Arts (6 hours)
      3 hours Fine Arts (ARTS 1301)
      3 hours Humanities (HUMA 1301)
   D. Mathematics and Quantitative Reasoning (6 hours)
      6 hours Calculus (MATH 2417 and 2419)3
   E. Science (9 hours)
      6 hours Science (NSC 3361 and CGS 2301)2
      3 hours Science Electives (including at least one course with a substantial laboratory component)

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: 57 hours (39 hours beyond Core Curriculum)

   Major Preparatory Courses: 27 hours
   All of the following:
   - CGS 2301 Cognitive Science2 (also satisfies 3 hours part E of Core Curriculum)
   - CS 1337 Computer Science I
   - CS 2305 Discrete Mathematics for Computing I
   - MATH 2417 Calculus I 3 (also satisfies 3 hours part D of Core Curriculum)
   - MATH 2418 Linear Algebra
   - MATH 2419 Calculus II 4 (also satisfies 3 hours part D of Core Curriculum)
   - PSY 2301 Introduction to Psychology 4 (also satisfies 3 hours part B of Core Curriculum)
   - PSY 2317 Statistics for Psychology
Major Core Courses: 18 hours

All of the following:

- CGS 3325 Historical Perspectives on Psychology: Mind and Machines Since 1600
- CGS 3361 Cognitive Psychology
- CGS 4312 Computational Models of Language Understanding
- or CGS 3342 Cognitive and Neural Modeling Laboratory
- or CS 4365 Artificial Intelligence
- NSC 3361 Behavioral Neuroscience¹ (also satisfies 3 hours part E of Core Curriculum)
- PSY 3392 Research Design and Analysis
- CGS 3340 Empirical Methods in Cognitive Science² (also satisfies 3 hours part A of Core Curriculum)

Major Related Electives (12 hours)

Students majoring in Cognitive Science must complete 12 additional hours of elective Cognitive Science coursework associated with a particular specialization area. The specialization areas listed in the Specializations section serve as examples of possible concentrations. Other specialization areas are permissible with the approval of the Program Head of the Cognitive Science program.

² A required Major course that also fulfills a Core Curriculum requirement.
³ Six hours of Calculus are counted to fulfill the Mathematics Core Requirement.

III. Elective Requirements: 42 hours

Advanced Electives:

Six hours of upper-division courses which do not have a CGS prefix.

Free Electives (36 hours)

Students are encouraged to explore areas of concentration in Cognitive Science as well as explore interests outside the field. Be aware that at least 51 hours of upper division credit hours are required for graduation.

Specialization Areas

Human Computer Interaction

Students specializing in the Human Computer Interaction area obtain skills in designing behavioral and computer software engineering. This area provides excellent preparation for careers associated with the design, software implementation, and evaluation of user-friendly software interfaces. The Human Computer Interaction specialization area has a Behavioral Science Track and a User-Interface Development Track.

Behavioral Science Track

Students electing this option should take at least two of the following courses:

- PSY 3362 Cognitive Development
- PSY 4362 Perception
- PSY 4364 Attention and Memory
- PSY 4374 Judgment and Decision Making

And take at least two of the following courses:

- CGS 4352 Human Computer Interactions I
- CGS 4353 Human Computer Interactions II
- CGS 4355 Human Computer Interactions Lab

User-Interface Track

Students electing this option should take:

- CS 3333 Data Structures
- CS 3354 Software Engineering

And take at least two of the following courses:

- CGS 4352 Human Computer Interactions I
Intelligent Systems
Students specializing in the Intelligent Systems area obtain skills in computer programming, mathematical modeling, and intelligent system design and evaluation. This area provides excellent preparation for careers associated with the design, software implementation, and evaluation of intelligent systems. Intelligent systems arise in such diverse areas as the development of web-based intelligent search engines, speech recognition, robotics, pattern recognition, and computer vision. All students electing this option should take the following courses during their freshmen and sophomore years:
- CS 2336 Computer Science II
- CS 3305 Discrete Mathematics for Computing II
- MATH 2418 Linear Algebra
- MATH 2419 Calculus II

Students in the Intelligent Systems specialization area have the option of selecting either the Mathematical Modeling Track or the Computer Simulation Modeling Track.

Mathematical Modeling Track
- CGS 4313 Neural Net Mathematics
- CGS 4314 Intelligent Systems Analysis
- CGS 4315 Intelligent Systems Design
- MATH 2451 Multivariable Calculus with Applications
- STAT 4351 Probability (or CS/EE/SE 3341)

Computer Simulation Modeling Track
All students in this track should take:
- CS 3345 Data Structures and Introduction to Algorithmic Analysis
And three of the following courses:
- CGS 3342 Cognitive and Neural Modeling Laboratory
- CGS 4312 Computational Models of Language Understanding
- CS 4365 Artificial Intelligence
- CS 4391 Introduction to Computer Vision

Cognition and Neuroscience
The Cognition and Neuroscience specialization provides a multidisciplinary program for preparing students to pursue graduate work in the areas of cognitive psychology and neuroscience. Students electing this option should take at least two neuroscience courses from the following list:
- CGS 4359 Cognitive Neuroscience
- NSC 4352 Cellular Neuroscience
- NSC 4353 Neuroscience Laboratory Methods
- NSC 4354 Integrative Neuroscience
- NSC 4355 Advanced Neuroscience Laboratory
- NSC 4363 Neuropharmacology
- NSC 4366 Neuroanatomy
- NSC 4367 Developmental Neurobiology
- NSC 4368 Computational Neuroscience

and at least two of the following psychology courses:
- PSY 3362 Cognitive Development
- PSY 4362 Perception
- PSY 4364 Attention and Memory
- PSY 4374 Judgment and Decision Making
Language and Speech

The Language and Speech specialization provides a multidisciplinary program for preparing students to pursue graduate work in areas such as language and communications disorders. Students electing this option should select at least four courses from the following list.

- LIT 3330 Linguistics
- SPAU 3303 Normal Language Development
- SPAU 3304 Communication Sciences
- SPAU 3343 Phonetics
- SPAU 3344 Anatomy and Physiology of Speech and Hearing
- SPAU 3345 Neural Basis of Communication

Additional Advanced Major Related CGS Electives

All School of Behavioral and Brain Science courses with a PSY (Psychology) or NSC (Neuroscience) prefix are approved CGS electives. In addition, advanced CGS students in good academic standing may request permission from the Cognitive Science Program Head to take graduate Applied Cognition and Neuroscience coursework (CAN prefix) to fulfill the CGS elective course requirements.

In addition, the following advanced electives are associated with all specialization areas. Approval from a Cognitive Science Faculty Advisor is required in order to take these electives.

- CGS 4V90 Special Topics in Cognitive Science
- CGS 4394 Internship in Cognitive Science
- CGS 4397 Honors Thesis
- CGS 4V98 Directed Research
- CGS 4V99 Individual Study

Minor in Cognitive Science

Students who are not majoring in Cognitive Science may minor in Cognitive Science by completing 18 semester credit hours. At least 12 of the 18 semester credit hours required by the minor in Cognitive Science must be upper-division courses. In addition, 9 of the 18 semester credit hours required for the minor in Cognitive Science must have a Cognitive Science (CGS) prefix and be upper-division courses. No credit hours may be used to satisfy both major and minor requirements; however, free elective hours or major preparatory classes may be used to satisfy the minor. At least one-third of the hours for a minor must be taken at U.T. Dallas. The following two specialization areas provide examples of possible course sequences which satisfy the requirements of the minor in Cognitive Science.

**Intelligent Systems Specialization Area in Mathematical Modeling.** Students with an Electrical Engineering or Mathematics background who have taken linear algebra, multivariable calculus, and probability theory and are interested in careers associated with the design, software implementation, and testing of intelligent systems should take CGS 4313 Neural Net Mathematics, CGS 3342 Cognitive and Neural Modeling Laboratory, CGS 4314 Intelligent Systems Analysis, and CGS 4315 Intelligent Systems Design.

**Human Computer Interactions Specialization Area in User-Interface Development.** Students with a Computer Science background who have taken CS 3354 Software Engineering and who are interested in careers associated with the design, software implementation, and testing of user-friendly computer interfaces should take the course CGS 3361 Cognitive Psychology; take two of the following courses: CGS 4352 Human Computer Interactions I, CGS 4353 Human Computer Interactions II, and CGS 4355 Human Computer Interactions Lab; and one of the following courses: CGS 4362 Perception, and CGS 4364 Attention and Memory, and PSY 4374 Judgment and Decision Making.

Fast Track Baccalaureate/Master’s Degrees

U.T. Dallas undergraduate students with strong academic records who intend to pursue a master’s degree in Applied Cognition and Neuroscience at UTD may consider an accelerated undergraduate-graduate plan of study. When accepted into the program, students may take up to 12 hours of graduate courses that may be used to complete the bachelor’s degree and also to satisfy
requirements for the Master's degree. Students must maintain a 3.00 grade point average and earn grades of B or better in the
graduate courses taken. The Fast Track makes it possible for students to complete upper-division undergraduate education and
graduate training in three years. To qualify for application, students must have completed at least 72 semester credit hours
toward their bachelor degree, including at least 18 semester credit hours in major core courses at UTD. Apply to the Fast Track
program through the Cognitive Science Program Office. Students should consult with a graduate advisor regarding admissions
criteria and plans of study at the beginning of their junior year.

Neuroscience (B.S.)

Neuroscience is the multidisciplinary study of brain function that draws on recent advances in cell and molecular biology,
biochemistry, biophysics, and computer and cognitive sciences. It examines the brain’s global and nanoscale biochemistry, its
complex and extensively networked anatomical structure, and its remarkably adaptive physiology. The field considers neuronal
development from early embryology through advanced senescence, and examines the brain’s plasticity from the level of single
neurons, through networks and systems of cells, on up to complete organisms. It studies the regulation and expression of
behavior, and the complex interactions of multiple neuronal systems that underlie the emergence of cognitive function. The
Neuroscience program at U. T. Dallas provides students with the opportunity to focus on the brain from a systems-level perspec-
tive, drawing on behavioral and cognitive expertise combined with cellular and molecular perspectives. It allows undergraduates
extensive interactions with working neuroscientists who use the latest experimental techniques.

The Neuroscience program is designed to prepare students for admission to graduate or medical school, or for careers in related
biomedical research, industry, and allied health science fields. Required courses and guided electives can include the approved
pre-medical curriculum and offer an alternative to other traditional pre-medical majors. Students who wish to continue their
education in the fields of medicine, dentistry or allied professional areas should register with the Health Professions Advisory
Committee during their first semester. Students are encouraged to design a personalized degree plan of guided electives with
their advisor that combines courses from the neurosciences and related disciplines of mathematics, physics, chemistry, biology,
engineering, computer science, psychology, and speech pathology and audiology in a way that will suit their individual interests
and goals. Students are also encouraged to gain research experience as part of their undergraduate training in Neuroscience.

Students can complete Core Curriculum and Neuroscience major requirements in a minimum of 85 semester credit hours, leaving
35 elective hours. Students can complete Core Curriculum, Neuroscience major, and Pre-health Professions requirements in a
minimum of 111 semester credit hours, leaving 9 remaining elective hours.

Bachelor of Science in Neuroscience Degree Requirements (120 hours)

I. Core Curriculum Requirements1: 42 hours
   A. Communication (6 hours)
      3 hours Communication (RHET 1302)
      3 hours Communication Elective (NSC 4353)2
   B. Social and Behavioral Sciences (15 hours)
      6 hours Government (GOVT 2301 and 2302)
      6 hours American History
      3 hours Social and Behavioral Science Elective (PSY 2301)2
   C. Humanities and Fine Arts (6 hours)
      3 hours Fine Arts (ARTS 1301)
      3 hours Humanities (HUMA 1301)
   D. Mathematics and Quantitative Reasoning (6 hours)
      3 hrs College Math (MATH 2414 or MATH 2417)2
      3 hrs Quantitative Methods (PSY 2317 or STAT 1342)2
   E. Science (9 hours)
      9 hrs Science (CHEM 1311 and CHEM 1111, BIOL 2311 and BIOL 2281)2

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in
parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.
II. **Major Requirements:** 64 hours (43 hours beyond Core Curriculum)

**Major Preparatory Courses:** 24 hours

All of the following:

- BIOL 2281 Introductory Biology Laboratory\(^2\) (also satisfies 3 hours part E of Core Curriculum)
- BIOL 2311/2111 Introduction to Modern Biology I \(^2\) with Workshop
- CHEM 1311/1111 General Chemistry I with Laboratory\(^2\) (also satisfies 3 hours part E of Core Curriculum)
- CHEM 1312/1112 General Chemistry II with Laboratory
- MATH 2414 Integral Calculus
  
  or MATH 2417 Calculus I \(^2\) (also satisfies 3 hours part D of Core Curriculum)
- PSY 2301 Introduction to Psychology \(^2\) (also satisfies 3 hours part B of Core Curriculum)
- PSY 2317 Statistics for Psychology\(^3\)
  
  or STAT 1342 Statistical Decision Making\(^3\) (also satisfies 3 hours part D of Core Curriculum)

**Major Core Courses:** 25 hours

All of the following:

- NSC 3361 Behavioral Neuroscience
- NSC 4066 Neuroanatomy Workshop
- NSC 4352 Cellular Neuroscience
- NSC 4353 Neuroscience Laboratory Methods\(^2\) (also satisfies 3 hours part A of Core Curriculum)
- NSC 4354 Integrative Neuroscience
- NSC 4356 Neurophysiology
- NSC 4363 Neuropharmacology
- NSC 4366 Neuroanatomy
- NSC 4367 Developmental Neurobiology

**Major Related Courses:** 15 hours (15 hours beyond the Core Curriculum)

Advanced Guided Electives, 15 semester hours from the following. Consultation with an advisor is required.

- BIOL 3301 Classical and Molecular Genetics
- BIOL 3302 Eukaryotic Molecular and Cell Biology
- BIOL 3361 Biochemistry I
- BIOL 3362 Biochemistry II
- BIOL 3455 Human Anatomy and Physiology w/ Lab I
- BIOL 3456 Human Anatomy and Physiology w/ Lab II
- CGS 4312 Computational Models of Language Understanding
- MATH 2413 Differential Calculus
- NSC 3344 Anatomy and Physiology of Speech and Hearing
- NSC 3345 Neural Basis of Communication
- NSC 4355 Advanced Neuroscience Laboratory
- NSC 4357 Neurobiology of Learning
- NSC 4358 Neurobiology of Sensation and Perception
- NSC 4368 Computational Neuroscience
- NSC 4359 Cognitive Neuroscience
- NSC 4370 Neuroendocrinology
- NSC 4372 Neuroimmunology
- NSC 4374 Neural Plasticity in Neuropathologies
- NSC 4375 Honors Seminar
- NSC 4376 Stress and the Nervous System
- NSC 4394 Internship in Neuroscience
- NSC 4397 Honors Thesis
- NSC 4V90 Special Topics in Neuroscience
- NSC 4V98 Directed Research\(^3\)
- NSC 4V99 Individual Study\(^4\)
- PSY 4362 Perception
- SPAU 3304 Communication Sciences

\(^2\) A required Major course that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.

\(^3\) May be repeated for credit, up to 9 hours.

\(^4\) May be repeated for credit, up to 6 hours.
III. Elective Requirements: 35 hours

Advanced Electives (6 hours)
Breadth Electives; 6 hours of upper-division courses, or lower-division courses that have prerequisites that are outside of Neuroscience.

Free Electives (29 hours)
At least 30 hours of lower- or upper-division courses of the student’s choice. Students are encouraged to explore areas of concentration in Neuroscience as well as explore interests outside the field. Be aware that at least 51 hours of upper-division credit hours are required for graduation.

Premedical and/or other pre-health professions students: 27 hours
Students seeking to complete Pre-health Professions requirements should take the following as free electives:

Required pre-medical courses (12 hours):
- BIOL 2112 Introduction to Modern Biology II Workshop
- BIOL 2312 Introduction to Modern Biology II
- CHEM 2123 Introductory Organic Chemistry Laboratory I
- CHEM 2125 Introductory Organic Chemistry Laboratory II
- CHEM 2323 Introductory Organic Chemistry I
- CHEM 2325 Introductory Organic Chemistry II

Pre-med Advanced Biology requirement (6 hours, select 2 courses):
- BIOL 3301 Classic and Molecular Genetics
- BIOL 3302 Eukaryotic Molecular and Cell Biology
- BIOL 3361 Biochemistry I
- BIOL 3362 Biochemistry II

Pre-med Physics requirement (8 hours, select 2 courses):
- PHYS 1101 College Physics Laboratory I
- PHYS 1102 College Physics Laboratory II
- PHYS 1301 College Physics I *
- PHYS 1302 College Physics II *
- PHYS 2125 Physics Laboratory I
- PHSY 2126 Physics Laboratory II
- PHYS 3341 Physics for Bio Science I **
- PHYS 3342 Physics for Bio Science II **

* algebra based Physics courses
** calculus based Physics courses

Minor in Neuroscience
Students who are not majoring in Neuroscience may minor in Neuroscience by taking 18 semester credit hours selected from the lists of major core courses and major related courses. At least 12 hours must be upper-division Neuroscience core courses. No credit hours may be used to satisfy both major and minor requirements; however, free elective hours or major preparatory classes may be used to satisfy the minor. At least one-third of the hours for a minor must be taken at U.T. Dallas.

Fast Track Baccalaureate/Master’s Degrees
U.T. Dallas undergraduate students with strong academic records who intend to pursue a master’s degree in Applied Cognition and Neuroscience at UTD may consider an accelerated undergraduate-graduate plan of study. When accepted into the program, students may take up to 12 hours of graduate courses that may be used to complete the baccalaureate degree and also satisfy requirements for the master’s degree. Students must maintain a 3.00 grade point average and earn grades of B or better in graduate courses taken. The Fast Track makes it possible for students to complete upper-division undergraduate education and graduate training in three years, including summer study. To qualify for application, students must have completed at least 72 semester credit hours toward their bachelor degree, including at least 18 semester credit hours in major core courses at UTD. Apply to the Fast Track program through the Applied Cognition and Neuroscience Program Office. Students should consult with a graduate advisor regarding admissions criteria and plans of study.
Psychology (B.A.)

William James characterized psychology as “the study of mental life.” Psychology is both a domain of scientific inquiry and a field of applied practice. The science of psychology is concerned with the study of how people perceive, learn, feel, think, develop, and interact with others. The practice of psychology helps people improve learning, performance, and mental health.

Undergraduate degrees in psychology provide students a number of career path options. Further study in graduate school leads to professional careers as clinical, counseling, industrial, academic and other kinds of psychologists. Psychology is also a useful major for students planning careers in law, management, medicine, or social work. A psychology major provides students with the knowledge about human behavior and methods of research and data analysis that is valuable in business, helping fields, and many other occupations.

The Psychology program at UTD approaches the field from a scientific perspective, applying behavioral science research methods to the study of the human mind and behavior. Thus, students will have laboratory experiences in addition to lectures, reading, and demonstrations. Psychology students learn to evaluate evidence relating to theories of social behavior, personality development, perception, memory, brain processes, and other facets of human experience. Students also gain hands-on experience through internship placements, directed research experiences in professor’s labs, and individualized study with faculty in specialized topics.

Selected courses are offered in a “conference” format (i.e., discussion seminar format), and students are encouraged to include some of these courses in their course of study. Conference courses are generally limited to an enrollment of 20, emphasize discussion of reading from primary sources, include written assignments with feedback from instructors, and are aimed at providing students with interactive experiences in critical thinking and writing.

The undergraduate degree awarded through the Psychology program is a bachelor of arts. Students may choose electives to obtain a broader grounding in psychology or a general education in the liberal arts. Students should note that it is possible to select clusters of electives that lead to particular concentrations in careers and graduate study. Students can complete Core Curriculum and Psychology major requirements in a minimum of 72 semester credit hours, leaving 48 elective hours.

Bachelor of Arts in Psychology
Degree Requirements (120 hours)

I. Core Curriculum Requirements1: 42 hours
   A. Communication (6 hours)
      3 hours Communication (RHET 1302)
      3 hours Communication Elective (PSY 3393)2
   B. Social and Behavioral Sciences (15 hours)
      6 hours Government (GOVT 2301 and 2302)
      6 hours American History
      3 hours Social and Behavioral Science Elective (PSY 2301)2
   C. Humanities and Fine Arts (6 hours)
      3 hours Fine Arts (recommend ARTS 1301)
      3 hours Humanities (recommend HUMA 1301)
   D. Mathematics and Quantitative Reasoning (6 hours)
      3 hours College Math (recommend MATH 1306, 1314 or 2417)
      3 hours Quantitative Methods or Math (PSY 2317)2
   E. Science (9 hours with at least one lab course)
      3 hours Science (NSC 3361)2
      6 hours Science Elective (see PSY Advisor for options)

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: 42 hours including at least 30 upper-division hours of required and guided elective courses in the major (30 hours beyond the Core Curriculum)
   Major Preparatory Courses
PSY 2301 Introduction to Psychology\(^2\) (also satisfies 3 hours part B of Core Curriculum)
PSY 2317 Statistics for Psychology\(^2\)
or STAT 1342 Statistical Decision Making (also satisfies 3 hours part D of Core Curriculum)

Major Core Courses (30 upper-division hours)
NSC 3361 Behavioral Neuroscience\(^2\)
PSY 3360 Historical Perspectives on Psychology: Mind and Machines Since 1600
PSY 3361 Cognitive Psychology
or CGS 2301 Cognitive Science
PSY 3392 Research Design & Analysis
or PSY 3490 Accelerated Quantitative Methods
PSY 3393 Experimental Projects in Psychology\(^2\) (also satisfies 3 hours part A of Core Curriculum)
PSY 4331 Personality
or PSY 3331 Social Psychology
PSY 4334 Lifespan Development
or PSY 3310 Child Development
PSY 4343 Abnormal Psychology

Major Related Courses (12 hours)
Advanced Guided Electives; 3 hours of one of the following:
PSY 4394 Internship in Psychology
PSY 4395 Co-op Fieldwork
PSY 4V96 Teaching Internship
PSY 4V97 Honors Thesis
PSY 4V98 Directed Research
PSY 4V99 Individual Study

Plus any 9 hours of courses with PSY or CGS or NSC prefixes or the following SPAU courses: 3301, 3303, 3304, 3340, 3343, 3344, 3345 or 4308.

\(^2\)A required Major course that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.

III. Elective Requirements: 48 hours III. Elective Requirements: 48 hours

Advanced Electives (6 hours) Advanced Electives (6 hours)
Breadth Electives; 6 hours of upper-division courses, or lower-division courses that have prerequisites, that are outside of Psychology (and not cross-listed with Psychology).

Free Electives (42 hours)
Courses of the student's choice. Students are encouraged to explore areas of concentration in Psychology as well as explore interests outside the field. Both lower- and upper-division courses may count as electives but students must be sure to complete at least 51 hours of upper-division courses to qualify for graduation.

Minor in Psychology

Students who are not majoring in Psychology may minor in Psychology by taking 18 semester credit hours selected from the lists of Psychology major core courses and major related courses (see Bachelor of Arts in Psychology, Degree Requirements – Major Core Courses and Major Related Courses lists are found within Numeral II, Major Requirements). At least 12 hours must be upper-division courses, of which at least 9 hours must be Psychology major core courses. No credit hours may be used to satisfy both major and minor requirements; however, free elective hours or major preparatory classes may be used to satisfy the minor. At least one-third of the hours for a minor must be taken at U.T. Dallas. Because Psychology is concerned with a wide range of social behaviors, it provides a strong foundation for all careers that deal with people. Students considering careers in business, education, law, medicine, clinical psychology, counseling or social work can benefit from minoring (or majoring) in psychology. The following courses are suggested preparation for each of these career paths.

Business Careers: Graduate schools of business look for students with a strong liberal arts background that focuses on both writing and quantitative skills. Suggested courses are Cognitive Psychology, Personality Psychology, Social Psychology, Psychology in the Workplace, Industrial and Organizational Psychology, Human Relations, and Research Design and Analysis.
**Education Careers.** Psychology courses are especially relevant for students pursuing careers in child development, educational psychology, education counseling, and school psychology. Suggested courses are Child or Lifespan Development, Cognitive Psychology, Educational Psychology, Cognitive Development, Exceptional Children, Social and Personality Development, Adolescent Psychology, Psychological Testing, Statistics for Psychology, and Research Design and Analysis.


**Medical Careers.** Psychology is highly recommended as a major or minor for premedical students interested in psychiatry or neurology, or any student who wishes to practice medicine. The intended area of medical specialization should influence choice of courses; for example, a future pediatrician would benefit from courses in developmental psychology. In general, suggested courses are Lifespan or Child Development, Behavioral Neuroscience, Health Psychology, Abnormal Psychology, Cognitive Psychology, Adolescent Psychology, Approaches to Clinical Psychology, Statistics for Psychology, and Research Design and Analysis.

**Careers in Clinical Psychology, Counseling, or Social Work.** All courses in psychology are good preparation for these careers. It is especially important that students take Lifespan Development, Behavioral Neuroscience, Cognitive Psychology, Personality Psychology, Abnormal Psychology, Statistics for Psychology, and Research Design and Analysis. Other courses of interest include Approaches to Clinical Psychology, Social Communication, Human Relations, Health Psychology, Psychological Testing, Child Psychopathology, and Violence in the Family.

**Fast Track Baccalaureate/Master’s Degrees**

U.T. Dallas undergraduate students with strong academic records who intend to pursue a master’s degree in Human Development and Early Childhood Disorders or in Applied Cognition and Neuroscience at U.T. Dallas may consider an accelerated undergraduate-graduate plan of study. When accepted into the program, students may take up to 12 hours of graduate courses that may be used to complete the baccalaureate degree and also to satisfy requirements for the master’s degree. Students must maintain a 3.00 grade point average and earn grades of B or better in graduate courses taken. The Fast Track makes it possible for students to complete upper-division undergraduate education and graduate training in three years, including summer study. To qualify for application, students must have completed at least 72 semester credit hours toward their bachelor degree, including at least 18 semester credit hours in major core courses at UTD. Apply to the Fast Track program through the Human Development and Early Childhood Disorders or Applied Cognition and Neuroscience Program Offices. Students should consult with a graduate advisor regarding admissions criteria and plans of study.

**Speech-Language Pathology and Audiology (B.S.)**

The Speech-Language Pathology and Audiology program offers study in the processes and disorders of speech, language, and hearing. The program provides the foundation for graduate study leading to career opportunities and clinical certification as a speech-language pathologist or audiologist. Students completing the B.S. degree and required clock hours of clinical practicum are also eligible for Texas state licensure as a speech-language pathology assistant. The curriculum in Speech-Language Pathology and Audiology focuses on the development of communicative abilities; the anatomical and physiological mechanisms underlying speech, language, and hearing; the causes of communication disorders in children and adults; and theories and techniques of assessment and treatment of communication disorders. Supervised clinical practicum provides students experience in clinical assessment and intervention with persons having communication impairments.

Students majoring in Speech-Language Pathology and Audiology are strongly encouraged to select electives in Psychology to complement course work in their major field. PSY 3361 Cognitive Psychology, PSY 4334 Lifespan Development, and NSC 3361 Behavioral Neuroscience are especially relevant for Speech-Language Pathology and Audiology majors. Suggested electives in the major include SPAU 3390 Clinical Practicum in Speech-Language Pathology (may be taken twice for credit), SPAU 4325/PSY 3342 Exceptional Children, SPAU 4342 Assessment Procedures in Speech-Language Pathology, and SPAU 4395 Issues in the Management of Persons with Hearing Impairment.
Students who wish to combine Speech-Language Pathology and Audiology with Psychology or Neuroscience should be able to meet requirements in both majors, and, with the approval of the Associate Dean, complete a double major. Students considering a double major should consult with their advisor regarding specific requirements. Students can complete Core Curriculum and Speech-Language Pathology and Audiology major requirements in a minimum of 78 semester credit hours, leaving 42 elective hours.

**Bachelor of Science in Speech-Language Pathology and Audiology Degree Requirements (120 hours)**

I. **Core Curriculum Requirements**¹: 42 hours
   
   A. Communication (6 hours)
   - 3 hours Communication (RHET 1302)
   - 3 hours Communication Elective (SPAU 3390)²
   
   B. Social and Behavioral Sciences (15 hours)
   - 6 hours Government (GOVT 2301 and 2302)
   - 6 hours American History
   - 3 hours Social and Behavioral Science Elective (PSY 2301)²
   
   C. Humanities and Fine Arts (6 hours)
   - 3 hours Fine Arts (ARTS 1301)
   - 3 hours Humanities (HUMA 1301)
   
   D. Mathematics and Quantitative Reasoning (6 hours)
   - 3 hours College Math (see Advisor for recommended courses)
   - 3 hours Quantitative Methods (see Advisor for recommended courses)
   
   E. Science (9 hours with at least one lab course)
   - 3 hours Science (SPAU 3344)²
   - 6 hours Science Elective (Students planning to attend graduate school in speech-language pathology or audiology should take a minimum of one course in the biological sciences and one course in the physical sciences. See Advisor for options.)

¹ Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. **Major Requirements**: 42 hours (33 hours beyond the Core Curriculum)

   Major Preparatory Courses
   - PSY 2301 Introduction to Psychology² (also satisfies 3 hours part B of Core Curriculum)

   Major Core Courses (39 hours)
   - SPAU 3301 Communication Disorders
   - SPAU 3303 Normal Language Development
   - SPAU 3304 Communication Sciences
   - SPAU 3340 Articulation Disorders
   - SPAU 3341 Audiology
   - SPAU 3343 Phonetics
   - SPAU 3344 Anatomy and Physiology of Speech and Hearing² (also satisfies 3 hours part E of Core Curriculum)
   - SPAU 3345 Neural Basis of Communication
   - or NSC 3361 Behavioral Neuroscience
   - SPAU 3388 Clinical Observation in Speech-Language Pathology (3 semester hrs)
   - SPAU 3390 Clinical Practicum in Speech-Language Pathology (3 semester hrs)² (also satisfies 3 hours part A of Core Curriculum)
   - SPAU 4308 Language Disorders in Children
   - SPAU 4394 Multicultural Aspects of Communication Disorders
   - or SPAU 4393 Language in Culture and Society
   - SPAU elective (3 hours of course with SPAU prefix)

² A required Major course that also fulfills a Core Curriculum requirement. Three hours are counted in Core Curriculum.
III. Elective Requirements: 45 hours

Advanced Electives (6 hours)

- Breadth Electives: 6 hours of upper-division courses, or lower-division courses that have prerequisites that are outside of Speech-Language Pathology and Audiology.

Free Electives (39 hours)

- At least 39 hours of lower- or upper-division courses of the student’s choice. Students are encouraged to explore areas of concentration in Speech-Language Pathology and Audiology as well as explore interests outside the field. At least 51 hours of upper-division credit hours are required for graduation.

Minor in Speech-Language Pathology and Audiology

Students interested in communication sciences and disorders may elect to minor in Speech-Language Pathology and Audiology. Students complete 18 credit hours including 12 required hours of foundation coursework and 6 elective hours. Foundation coursework in conjunction with elective hours permits students to choose to emphasize hearing science/audiology, language development and disorders, or speech production and perception. Students majoring in Psychology, Neuroscience, or Cognitive Science, or students with interests in the health sciences may find that a minor in Speech-Language Pathology and Audiology adds a valuable interdisciplinary dimension to their overall plan of study and may enhance their opportunities for graduate study. No credit hours may be used to satisfy both major and minor requirements; however, free elective hours or major preparatory classes may be used to satisfy the minor. At least one-third of the hours for a minor must be taken at U.T. Dallas.

- Foundation Courses (12 hours required)
  - SPAU 3301 Communication Disorders
  - SPAU 3303 Normal Language Development
  - SPAU 3304 Communication Sciences
  - SPAU 3343 Phonetics

- Elective Courses (select 6 hours)
  - SPAU 3340 Articulation Disorders
  - SPAU 3341 Audiology
  - SPAU 3344 Anatomy and Physiology of Speech and Hearing
  - SPAU 3388 Clinical Observation in Speech-Language Pathology
  - SPAU 3390 Clinical Practicum in Speech-Language Pathology
  - SPAU 4308 Language Disorders in Children
  - SPAU 4393 Language in Culture and Society
  - SPAU 4395 Issues in the Management of Persons with Hearing-Impairment

Fast Track Baccalaureate/Master’s Degrees

U.T. Dallas undergraduate students with strong academic records who intend to pursue a master’s degree in Communication Disorders at the University may consider an accelerated undergraduate-graduate plan of study. When accepted into the program, students may take up to 12 hours of graduate courses that may be used to complete the baccalaureate degree and also to satisfy requirements for the master’s degree. Students must earn grades of B or better in graduate courses taken. For application forms and information on application procedures, please contact the Associate Dean’s Office.
School of Economic, Political and Policy Sciences

As a collective of several disciplines, social science is the study of people, groups of people, institutions, and organizations. It is a commitment to the description, explanation and prediction of human behavior. Social scientists ask such questions as: How are groups formed? How do people produce and distribute goods? Why do cities grow, and why do some cities decay? What are the causes of war, of racial discrimination, of revolutions? What roles do government, law and politics play in our society? And, how can we improve our quality of life? Social science uses rigorous methodologies to apply ideas and theories to the real world. Degrees in the social sciences provide students with the tools of critical thinking that allow them to work and succeed in business, government and not-for-profit organizations.

The School of Economic, Politics and Policy Sciences offers undergraduate degrees in Criminology, Economics, Geography, International Political Economy, Political Science, Public Affairs, and Sociology. Each degree offers a large number of elective hours that allow students to direct their educational focus. Careers building on social science degrees include law, public service, finance, banking, criminal justice, human resource management, teaching, market research and analysis, urban planning and counseling to name a few.

Faculty

Professors: Sheila Amin Gutiérrez de Piñeres, Daniel Arce, Kurt Beron, Brian J. L. Berry (Dean), Anthony M. Champagne, Harold Clarke, Rachel Croson, Lloyd J. Dumas, Catherine Eckel, Euel Elliott (Senior Associate Dean), Daniel Griffith, Edward J. Harpham, Donald A. Hicks, Paul Jargowsky, L. Douglas Kiel, Murray J. Leaf, Robert Lowry, James Marquart, James C. Murdoch, Lawrence J. Redlinger, Todd Sandler, Richard K. Scutch, Barry J. Seldon, Marianne C. Stewart, Paul Tracy, Wim P. M. Vrijeborg, Douglas Watson

Associate Professors: Bobby C. Alexander, Philip K. Armour, Nathan Berg, Thomas Brunell, Marie Chevrier, Simon Fass, Jennifer S. Holmes, Bruce Jacobs, Thomislav Kovandzik, Susan Williams McElroy, Fang Qui, Kevin Siqueria, Gregory S. Thielemann, Michael Tiefelsdorf, John Worrall

Assistant Professors: Paul Battaglio, Patrick Brandt, Kevin Curtin, Chetan Dave, Douglas Dow, Karen Hayslett-McCall, Melinda Kane, Linda Kemp Keith, Robert Morris, Stephanie Newbold, Denise Pacquette-Boots, Clint Peinhardt, Alicia Schortgen, Sheryl Skaggs, Lynne Vieraitis, Carole Wilson

Professors Emeritus: Alexander L. Clark, Irving J. Hoch

Research Professor: Sonya Salamon

Clinical Professors: Donald Arbuckle, Stuart Murchison

Clinical Associate Professor: Wendy Hassett

Clinical Assistant Professors: Timothy Bray, Wenhua Di, Danielle Lavin-Loucks

Senior Lecturers: Brian Bearry, Teodora Benevides, Cliff Bowden, Kruti Dholakia (Associate Dean for Undergraduate Education)

Programs and General Courses

The School of Economic, Political and Policy Sciences has seven degree-granting programs: Criminology, Economics, Geography, International Political Economy, Political Science, Public Affairs, and Sociology. Within each of these programs, students may specialize in areas that complement their interests and career plans, such as urban studies, political economy, law and society, and comparative studies. Students should also note that many courses listed under Interdisciplinary Studies (ISSS) and Social Sciences (SOCS) apply within their major.

Minor Areas of Study

The School of Economic, Political and Policy Sciences offers minors in Criminology, Economics, Geography, International Political Economy, Political Science, Public Affairs, and Sociology. Minors are described following each major. The School of Economic, Political and Policy Sciences requires that a minimum of 12 of the 18 hours for a minor be taken at UTD.

Related Minor Areas: (See Minor's Handbook for specific course requirements)

Minor in Urban Development (18 hours)
Minor in Gender Studies (18 hours)
Minor in Global Studies (18 hours)

Social Studies Teacher Certification
Teacher certification is offered in Composite Social Studies, Economics, Geography, Government, and History. Specific course requirements are available in the Teacher Development Center.

Economic, Political, and Policy Sciences Core Requirements
All undergraduates receiving degrees in the School of Economic, Political and Policy Sciences must have taken and passed a core of courses designed to provide breadth and an interdisciplinary perspective beyond any individual social science discipline. These courses include:

- Three semester hours in economics (normally ECON 2302 or ECON 2301)
- Three semester hours in sociology (normally SOC 1301 or SOC 2319)
- Four semester hours in statistics (normally SOCS 3405)
- Three semester hours in an approved ISSS or other Social Science course with a comparative or international focus; see required comparative or international courses under Major Core Courses under each Major.
- Three semester hours in an approved Social Science course satisfying the advanced writing requirement; see courses under Major Core Courses for each Major.
- Three semester hours in an approved ISSS or other Social Science course with a distributive justice focus; see required distributive justice courses under Major Core Courses for each Major.

Internship and Independent Study Policy
The total number of independent study and internship hours are limited to nine total hours with the exception of extenuating circumstances to be approved by the Associate Dean for Undergraduate Education.

Fast Track Baccalaureate/Master's Degrees
Undergraduate EPPS majors with a strong academic record (3.00 or above) are encouraged to enter the Fast Track program, which allows qualified seniors to take up to 15 credit hours of graduate courses during their senior year. The number of hours required to complete the graduate degree is reduced by the number of Fast-Track graduate hours completed with grades of B or better. So, for example if the degree requirements were 36 hours, a Fast-Track undergraduate who passed 12 hours of well-chosen graduate coursework with grades of A or B, would have only 36-12=24 hours of graduate coursework left in order to complete the graduate degree. When a successful Fast-Track student graduates with the B.S./B.A. degree, he or she still needs to complete an application for admission to the graduate school at UT Dallas and meet all requirements for admission, including the Graduate Records Exam (GRE) and letters of recommendation. Degree requirements and hours vary by programs. Students enrolled in the Fast Track must maintain a 3.00 grade point average and earn grades of B or better in graduate courses taken. Students who are interested in the Fast Track should speak with the Program Head and complete an application form with their academic advisor prior to the final 30 credit hours of work for the B.A. or B.S. degree.

Economics, Political, and Policy Sciences Honors Program
The School Honors Program in the School of EPPS provides eligible students with the opportunity for recognition at the Program level for scholarly performance in degree programs within the School. In order to earn EPPS honors a student must:

1. graduate with an overall GPA of 3.40 or higher
2. graduate with a GPA of 3.40 or higher in their major program of study
3. complete any two of the following requirements:
   a. Complete 9 hours of honors designated courses as determined by the program, with no less than a “B” in each course.
   b. Complete an internship by completing three hours of 4V98 internship. The internship must be approved by the Program Head, and have a significant research component.
   c. Register for 4V99 Senior Honors and complete an Honors paper.
School Honors with Distinction will be awarded to those students who complete a Senior Honors thesis, and whose paper is judged by a faculty committee to be of exemplary quality and provided the student meets the other requirements stated above.

Students must apply for admission to the Program Head and Undergraduate Program advisor of the academic program in which they expect to receive their degree. Students must apply no later than 30 semester hours prior to graduation and no earlier than 60 hours prior to graduation.

**Criminology (B.A.)**

The Criminology Program is an interdisciplinary academic program, based primarily in criminology and sociology that studies the interrelationships among law, policy, and societal conditions. The relationships among these factors are dynamic and complex, therefore Criminology integrates a variety of perspectives, approaches, and social science disciplines in order to analyze and understand the origins of crime and injustice and society’s response to these issues.

**Mission Statement**

The mission of the Criminology Program is to examine the causes and consequences of crime and crime control politics by providing a program of study involving a variety of perspectives, approaches, and social science disciplines to undergraduate students. Our faculty members are dedicated teachers and scholars who have published their work in the most prestigious journals in the field. They are committed to expanding the knowledge of the discipline and preparing students to be leaders in influencing our society’s response to crime.

Majors in the Criminology program at U.T. Dallas will be provided an educational experience, which will allow them to put their academic training, background and experience to use in a wide variety of post-graduate educational and occupational positions, including:

- Employment in Criminal Justice agencies at the federal, state, and local government level;
- Graduate School in Criminology or Criminal Justice (or a related social science discipline);
- Law School; or
- Social Work, Counseling, or other Human Service program.

**Bachelor of Arts in Criminology Degree Requirements (120 hours)**

**I. Core Curriculum Requirements**: 42 hours

- A. Communication (6 hours)
  - 3 hours Communication (RHET 1302)
  - 3 hours Communication Elective (CRIM 3300)²
- B. Social and Behavioral Sciences (15 hours)
  - 6 hours Government (GOVT 2301 and 2302)
  - 6 hours American History
  - 3 hours Social and Behavioral Sciences Elective (ECON 2301 or ECON 2302)²
- C. Humanities and Fine Arts (6 hours)
  - 3 hours Fine Arts (ARTS 1301)
  - 3 hours Humanities (HUMA 1301)
- D. Mathematics and Quantitative Reasoning (6 hours)
  - 3 hours Mathematics (at or above College Algebra, recommended MATH 1306 or 1314)
  - 4 hours Quantitative Reasoning (SOCS 3405)²
- E. Science (9 hours including at least one course with a substantial laboratory component)

² Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

**II. Major Requirements**: 52 hours

Major Preparatory Courses (6 hours)

- CRIM 1301 Introduction to Criminal Justice
- CRIM 1307 Introduction to Crime and Criminology
Major Core Courses (22 hours)
CRIM 3301 Theories of Justice
or another EPPS course with a distributive justice emphasis such as SOC 4361 Law and Society, SOC 4302 Class, Status, and Power, or ECON 4320 Public Sector Economics
CRIM 3302 Advanced Criminology
CRIM 3303 Advanced Criminal Justice
CRIM 3304 Research Methods in Crime and Justice Studies (taken before SOCS 3405)
CRIM 3319 Comparative Justice Systems
or another ISSS or Social Science course with a comparative or international focus such as ECON 3370 The Global Economy, or PSCI 3350 Comparative Politics
CRIM 4305 Social Control and Criminal Sanctions
CRIM 4321 Senior Research Seminar
SOCS 3405 Introduction to Social Statistics with Lab\(^\text{2}\)

3 hours Communication Elective (See advisor for list of approved courses) \(^\text{2}\)

Major Related Courses (24 hours)
15 hours CRIM courses, including at least 12 hours of upper-division courses
9 hours Major and Related Electives\(^\text{3}\)

\(^2\) This course is a Major requirement that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.

\(^3\) Students must take 3 hours in Sociology. Most students take 6 hours of upper-division CRIM courses. However, subject to advisor approval, courses from other disciplines may be used to satisfy this requirement.

III. Elective Requirements: 26 hours
Advanced Electives (6 hours)
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.
Free Electives (20 hours)
This requirement may be satisfied with lower- and upper-division courses from any field of study. Note: Students must complete at least 51 hours of upper-division credit to qualify for graduation.

Minor in Criminology: 18 hours
For a minor in Criminology, students must take the following: CRIM 1301 and CRIM 1307, and twelve hours of crime and justice studies electives, excluding CRIM 4V97, CRIM 4V98, and CRIM 4V99.

Economics (B.A., B.S.)
Economists study how people make choices in life when scarcity limits what is available. They look at a society's financial, industrial, and labor organizations; its distribution of income and ownership rights; its governmental activities; and its political and economic philosophies, and analyze how these and other factors influence the goods an economy produces, the resources it uses in production, and the distribution of its output. They also look at how incentives affect decisions relating to human behavior, such as whether to obey the law, get married, or have children.

Economic analysis leads to explanations, predictions, and policy suggestions. How are wages and prices set? Why do some cities boom while others decline? Why do we have an energy crisis? How should we use our exhaustible resources? How will consumers and corporations react to a tax cut? How can the crime rate be reduced? If we are to use our resources efficiently, what antitrust and government regulations should be enforced? What can be done to reduce inflation and unemployment? To prevent excess pollution? To achieve economic growth? To distribute income more equitably? In examining these sorts of questions, economics helps us to understand more clearly the choices available to us and the consequences of our decisions.

There is an abundance of career opportunities for an economics major.

Careers in business include consulting, banking and other financial institutions, insurance, corporate strategic planning, real estate, journalism, management, marketing, and public utilities.
Careers in government include consulting, publicly owned utilities, planning and forecasting, regulatory agencies, management, needs assessment, legislative staffs, judicial agencies, and executive support.

Careers in the interfacing of business and government include labor arbitration, regulation, environmental planning, urban and regional planning, and interest representation.

**Bachelor of Arts in Economics**

**Degree Requirements (120 hours)**

I. **Core Curriculum Requirements**: 42 hours
   
   A. Communication (6 hours)
      
      3 hours Communication (RHET 1302)
      3 hours Communication Elective (ECON 4346 or ECON 4382)\(^2\)
   
   B. Social and Behavioral Sciences (15 hours)
      
      6 hours Political Science (GOVT 2301 and 2302)
      6 hours American History
      3 hours Social and Behavioral Sciences Elective (SOC 1301, SOC 2319, CRIM 1301, or CRIM 1307)\(^2\)
   
   C. Humanities and Fine Arts (6 hours)
      
      3 hours Fine Arts (ARTS 1301)
      3 hours Humanities (HUMA 1301)
   
   D. Mathematics and Quantitative Reasoning (6 hours) \(^3\)
      
      3 hours Mathematics (at or above the level of College Algebra)
      3 or 4 hours Quantitative Reasoning (STAT 1342 or SOCS 3405)\(^2\)
   
   E. Science (9 hours including at least one course with a substantial laboratory component)

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\(^1\) Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. **Major Requirements**: 46 hours

   Major Preparatory Courses (6 hours)
   
   ECON 2301 Principles of Macroeconomics*  
   ECON 2302 Principles of Microeconomics*

   Major Core Courses (22 hours)
   
   ECON 3304 Basic Techniques for Economic Research*  
   ECON 3310 Intermediate Microeconomic Theory  
   ECON 3311 Intermediate Macroeconomic Theory  
   STAT 1342 Statistical Decision Making  
   or SOCS 3405 Introduction to Social Statistics with Lab\(^2\)

   One of the following:
   
   ECON 4346 Technology, Economy and Society  
   ECON 4382 International Finance

   Distributive Justice Course:
   
   ECON 4320 Public Sector Economics

   And one of the following:
   
   ECON 3370 The Global Economy  
   ECON 4360 International Trade  
   ECON 4362 Development Economics  
   ECON 4382 International Finance

   Major Related Courses (24 hours)
   
   24 hours Economics upper-division ECON courses

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\(^2\) A Major requirement that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum above.

\(^3\) Students wishing to pursue Master’s or Ph.D. degrees in economics should consult their advisor about appropriate mathematics and quantitative methods courses.

* Indicates a prerequisite class to be completed before enrolling for upper-division classes in Economics and Finance.
III. Elective Requirements: 32 hours

Advanced Electives (6 hours)
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.

Free Electives (26 hours)
This requirement may be satisfied with lower- and upper-division courses from any field of study. Students must complete at least 51 hours of upper-division credit to qualify for graduation.

Bachelor of Science in Economics
Degree Requirements (120 hours)

I. Core Curriculum Requirements: 42 hours

A. Communication (6 hours)
   3 hours Communication (RHET 1302)
   3 hours Communication Elective (recommended ECON 4346 or ECON 4382)\(^1\)

B. Social and Behavioral Sciences (15 hours)
   6 hours Political Science (GOVT 2301 and 2302)
   6 hours American History
   3 hours Social and Behavioral Sciences Elective (SOC 1301, SOC 2319, CRIM 1301, or CRIM 1307)\(^2\)

C. Humanities and Fine Arts (6 hours)
   3 hours Fine Arts (ARTS 1301)
   3 hours Humanities (HUMA 1301)

D. Mathematics and Quantitative Reasoning (6 hours)
   3 hours Mathematics (MATH 2417 recommended, or MATH 1325)
   3 hours Quantitative Reasoning (STAT 3360)\(^2\)

E. Science (9 hours including at least one course with a substantial laboratory component)

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education.
2 The courses listed in parenthesis are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: 53 hours

Major Preparatory Courses (14 hours)

ECON 2301 Principles of Macroeconomics\(^*\)
ECON 2302 Principles of Microeconomics\(^*\)
MATH 2417 Calculus I (recommended)
or MATH 1325 Applied Calculus I\(^*\)
MATH 2418 Linear Algebra (recommended)
or MATH 2333 Matrices, Vectors and Their Application
MATH 2419 Calculus II (recommended)
or MATH 1326 Applied Calculus II

Major Core Courses (24 hours)

ECON 3310 Intermediate Microeconomic Theory
ECON 3311 Intermediate Macroeconomic Theory
ECON 4351 Mathematical Economics
ECON 4355 Econometrics
STAT 3360 Probability and Statistics for Management and Economics \(^2\)

One of the following: \(^2\)
ECON 4346 Technology, Economy and Society
ECON 4382 International Finance

Distributive Justice Course:
ECON 4320 Public Sector Economics

And one of the following:
ECON 3370 The Global Economy
ECON 4360 International Trade
ECON 4362 Development Economics
ECON 4382 International Finance

Major Related Courses (15 hours)
15 hours Economics upper-division ECON courses

2 A Major requirement that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.
3 Students wishing to pursue Master’s or Ph.D. degrees in economics should consult their advisor about appropriate mathematics and quantitative methods courses.
* Indicates a prerequisite class to be completed before enrolling for upper-division classes in Economics and Finance.

III. Elective Requirements: 25 hours

Advanced Electives (6 hours)
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.

Free Electives (19 hours)
This requirement may be satisfied with lower- and upper-division courses from any field of study. Students must complete at least 51 hours of upper-division credit to qualify for graduation. Note: students may need more than 19 hours, depending on the mathematics sequence selected.

One option of specialization offered by the Economics program to students pursuing a Bachelor of Science degree is a double major with a Bachelor of Science in Finance with the Chartered Financial Analyst (CFA®) track. The CFA® program, administered by the CFA® Institute, is a globally recognized standard for measuring the competence and integrity of financial analysts. Three levels of examination measure a candidate’s ability to apply the fundamental knowledge of investment principles at a professional level. The CFA® examinations are administered annually in more than 70 nations worldwide. For information about registering in the CFA® program, see the CFA® web site at http://www.cfainstitute.org/. The Economics Program, in conjunction with the Finance Program in the School of Management, offers a number of courses that help prepare students for the level I examination. Specific information is provided in the section on requirements for the Bachelor of Science in Economics.

Bachelor of Science in Economics and Finance (Double Major) with an emphasis in CFA®

Degree Requirements (126-127 hours)

I. Core Curriculum Requirements: 42 hours

A. Communication (6 hours)
3 hours Communication (RHET 1302)
3 hours Communication Elective (BA 3311)
B. Social and Behavioral Sciences (15 hours)
6 hours Government (GOVT 2301 and 2302)
6 hours American History
3 hours Social and Behavioral Sciences Elective (ECON 2301)
C. Humanities and Fine Arts (6 hours)
3 hours Fine Arts (ARTS 1301)
3 hours Humanities (HUMA 1301)
D. Mathematics and Quantitative Reasoning (6 hours)
3 hours Mathematics (MATH 1325)
3 hours Quantitative Reasoning (STAT 3360)
E. Science (9 hours including at least one course with a substantial laboratory component)

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.
* Degree is 127 hours if student is required to take RHET 1101.

II. Major Requirements: 57 hours

Major Preparatory Courses (18 hours)
AIM 2301 Introductory Financial Accounting *
AIM 2302 Introductory Management Accounting 
BA 2301 Business and Public Law 
ECON 2301 Principles of Macroeconomics
ECON 2302 Principles of Microeconomics
MATH 1325 Applied Calculus I 2, 3
MATH 1326 Applied Calculus II 2, 3
MATH 2333 Matrices, Vectors and Their Application 4

Major Core Courses (42 hours)

BA 3311 Business Communications
BA 3341 Business Finance
BA 3351 Introduction to Management Information Systems
BA 3352 Production Management
BA 3361 Organizational Behavior
BA 3365 Principles of Marketing
BA 3390 Quantitative Methods in Finance
BA 4305 Strategic Management
BA 4346 Investment Management
BA 4371 International Business
ECON 3310 Intermediate Microeconomic Theory
ECON 3311 Intermediate Macroeconomic Theory
ECON 4351 Mathematical Economics
ECON 4355 Econometrics
STAT 3360 Probability and Statistics for Management and Economics 2

2 A Major requirement that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.
3 These hours are counted under Mathematics Core above; students may substitute MATH 2417 and MATH 2419.
4 Students may substitute MATH 2418 or CS 2305.
* Indicates a prerequisite class to be completed before enrolling for upper-division classes in Economics and Finance.

III. Guided Elective Requirements: 27 hours

Select 9 hours from: BA 4199, BA 4299, BA 4345, BA 4347, BA 4348, BA 4349, BA 4350, or BA 4361.
Select 6 hours from: AIM 3320, AIM 3331, AIM 3351, AIM 4332, AIM 4336, or AIM 4337.
Select 12 hours from: ECON 3370, ECON 4320, ECON 4346, ECON 4360, ECON 4362, ECON 4382, ECON 4396, or ECON 4399.

Minor in Economics (18 hours)

For a minor in Economics, students must take ECON 2301, ECON 2302, ECON 3304, either ECON 3310 or ECON 3311, and six hours of ECON electives. Electives may be any upper-division course with the ECON prefix with the exception of ECON 4V97, ECON 4V98, and ECON 4V99.

Geography (B.A.)

Geography is the science of place and space. Geographers ask where things are located on the surface of the earth, why they are located where they are, how places differ from one another, and how people interact with the environment. It is inherently interdisciplinary and international, and has been revolutionized recently by new technologies such as geographic information systems, global positioning systems and remote sensing.

Geographers forge close ties with many others including urban and regional economists, sociologists and planners, as well as with those who study international trade and economic growth. Geographers who explore environmental relationships become skilled in earth science (for example, geomorphology or climatology) or become leaders in the development of cultural ecology, linking closely with anthropology and archaeology. Geographers play leading roles in such policy arenas as urban and transportation planning, area studies, regional and international development, risk analysis, and environmental management. And they increasingly contribute their technological skills in geographic information systems, remote sensing and spatial analysis.
Mission and Objectives
The mission of the Bachelor of Arts in Geography program is to provide students a rigorous education in the fundamental theories, concepts, quantitative tools and analytical research methodologies central to the field of geography. The program fosters an understanding of the local and global ways in which humans interact with spatially distributed phenomena, organize their activities in space, and use and manage the earth’s resources and environments. So equipped, UT Dallas geography graduates will effectively participate as global citizens, successfully compete for professional jobs requiring strong analytical geographic skills and an integrative spatial perspective, and be admitted to the best graduate schools globally.

Students in the program will:
• Demonstrate their knowledge of the fundamental theories and concepts central to the field of geography.
• Apply quantitative tools and analytical research methodologies to spatial issues central to the field of geography.
• Analyze and evaluate the local and global ways in which humans interact with spatially distributed phenomena, organize their activities in space, and use and manage the earth’s resources and environments.

Options
UTD offers three degree options to its geography majors: a general B.A. degree, a B.A. with certification in Geographic Information System (GIS) technologies, and a B.A. with a concentration in Regional Development and International Studies.

Those who elect the general BA degree are provided an educational experience to allow them to put their degrees, backgrounds, and experience to use in a wide variety of post-graduate educational and occupational positions, including:
• Graduate School in Geography (or a related social, policy or environmental science discipline, including UTD’s own graduate programs in Geospatial Information Science, Public Policy and Political Economy, and Public Affairs;
• Urban, Environmental or Transportation Planning;
• The travel industry;
• Public Policy or Management;
• Marketing, Real Estate or Location Analysis;
• Employment in federal, state and local government agencies.

Those who elect the option for certification in Geographic Information Systems have added opportunities as GIS analysts in many of these same areas, as well as other areas such as natural resource exploration, cartography, crime analysis, and geospatial intelligence.

The concentration in regional development and international studies is interdisciplinary and serves a group of students who cross the disciplines of geography, political science, economics, sociology, and the humanities. Graduates with a specialization in this area will possess the skills that are necessary to meet the needs and demands of the international diplomatic and business sectors, in particular, students will be prepared to identify and develop solutions to current problems in public and international affairs, including regional development. Students also will be prepared for analytical and administrative positions and responsibilities in the government, policy-making, or private sector. The program builds on requirements in foreign language, regional/comparative studies, and an international foundation. Students choose from three fields of study: Globalization and Development, International Political Economy, and Culture and Politics. Each field of study combines theory and social science research methods to provide students with the skills and ability to deal effectively with international issues. The Globalization and Development field focuses on issues related to the global economy and regional development. The International Political Economy field allows students to understand how economic policy is formulated by political leaders, providing a means to better understand complex interactions at the local, national, and international levels. The Culture and Politics field allows students to explore the mutual engagement of culture, space, and political power adding a new and crucial dimension to the study of international affairs.

Bachelor of Arts in Geography
Degree Requirements (120 hours)

I. Core Curriculum Requirements: 42 hours
   A. Communication (6 hours)
      3 hours Communication (RHET 1302)
      3 hours Communication Elective (GEOG 3377)
B. Social and Behavioral Sciences (15 hours)
   6 hours Political Science (GOVT 2301 and 2302)
   6 hours American History
   3 hours Social and Behavioral Sciences Elective (SOC 1301, SOC 2319, CRIM 1301, or CRIM 1307)  
C. Humanities and Fine Arts (6 hours)
   3 hours Fine Arts (ARTS 1301)
   3 hours Humanities (HUMA 1301)
D. Mathematics and Quantitative Reasoning (6 hours)
   3 hours Mathematics (at or above the level of College Algebra)
   4 hours Quantitative Reasoning (SOCS 3405)  
E. Science (9 hours)
   GEOS 1103 Physical Geology Laboratory
   GEOS 1104 History of Earth and Life Laboratory
   GEOS 1303 Physical Geology
   GEOS 1304 History of Earth and Life
   1 hour Science elective

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. 2 The courses listed in parenthesis are the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: 52 hours
Major Preparatory Courses (9 hours)
   ECON 2302 Principles of Microeconomics* 
   GEOG 2303 People and Place: An Introduction to World Geographic Regions 
   GEOG 2302 The Global Environment* 
   GEOS 1103 Physical Geology Laboratory  
   GEOS 1104 History of Earth and Life Laboratory
   GEOS 1303 Physical Geology
   GEOS 1304 History of Earth and Life
   1 hour Science elective

Major Core Courses (25 hours)
   GEOG 3304 Tools for Spatial Analysis
      or GEOG 3323 Geographic Information Systems 
   GEOG 3377 Urban Planning and Policy  
   SOCS 3405 Introduction to Social Statistics with Lab
   Four of the following: 
      GEOG 3301 Cultural Ecology 
      GEOG 3331 Urban Growth and Structure 
      GEOG 3341 Politics, Place and Space 
      GEOG 3357 Spatial Dimensions of Health and Disease 
      GEOG 3358 Population: Concepts and Issues 
      GEOG 3370 The Global Economy 
      GEOG 3372 Population and Development 
      GEOG 3373 Transportation and Logistics 
      GEOG 4380 Spatial Concepts and Organization 
   One of the following: 
      CRIM 3301 Theories of Justice 
      ECON 4320 Public Sector Economics 
      PSCI 4364/SOC 4364 Civil Rights Law and Society 
      SOCS 4361 Law and Society 
   Major Related Courses (24 hours) 
      18 hours Geography upper-division electives 
      6 hours Major and Related electives  

2 A Major requirement that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.
3 Most students take upper-division GEOG courses. However, subject to advisor approval, courses from other disciplines may be used to satisfy this requirement. * Indicates a prerequisite to be completed before enrolling in upper-division GEOG courses.
III. Elective Requirements: 26 hours

Advanced Electives (6 hours)
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.

Free Electives (20 hours)
This requirement may be satisfied with lower- and upper-division courses from any field of study. Students must complete at least 51 hours of upper-division credit to qualify for graduation.

Specialization Areas

GIS Certification
This specialization area requires admission into the Fast Track program. Students interested in this specialization should take the following sequence of courses within the Major Related Requirements.

Major Related Courses (9 hours)
9 hours Geography upper-division electives

GIS Certification (15 hours)
GISC 6381 GIS Fundamentals
GISC 6382 Applied GIS
GISC 6387 GIS Workshop
Two additional GISC courses

Regional Development and International Studies Concentration
Students interested in this specialization should take the following sequence of courses within the Major Related and Elective Requirements.

Major Related Courses (12 hours)
12 hours Geography upper-division electives

Regional Development and International Studies (32 hours)
Regional and Comparative Studies (9 hours)
These must be from the same area (e.g. Latin America, Europe, Africa, or The Middle East). See an advisor for a list of approved courses.

International Foundation (9 hours)
Choose 3 of the following:
ECON 4360 International Trade
ECON 4382 International Finance
PSCI 3328 International Relations
PSCI 3350 Comparative Politics
PSCI 4329 Global Politics

Field of Study (14 hours)
Students must choose from Globalization and Development; International Political Economy; or Culture and Politics. All hours must be taken in the same field of study. See an advisor for a list of approved courses.

Advanced Electives (6 hours)
6 hours in the same foreign language. These must be either upper-division classes or lower-division classes that have prerequisites.

Minor in Geography (18 hours)
For a minor in Geography, students must take GEOG 2302, GEOG 3304, GEOG 3370 and three additional Geography (GEOG) or Geographic Information Sciences (GISC) courses, with no more than one at the lower division (100 or 200 level).

3 Most students take upper-division GEOG courses. However, subject to advisor approval, courses from other disciplines may be used to satisfy this requirement.
International Political Economy (B.A., B.S.)

The International Political Economy program is an interdisciplinary academic program to help students function successfully in today's increasingly complex international environment. Graduates will develop skill sets that include critical thinking, knowledge of multiple cultures, and effective communication skills. Students will be prepared for entry level analytical and administrative positions in the public, non-profit, and for profit private sectors. The School of Economic, Political, and Policy Sciences offers both the B.A. and B.S. degree in International Political Economy. The B.A. degree places a somewhat greater emphasis on culture, literature, and history. The B.S. degree places a somewhat greater emphasis in economics and international finance.

Employment options include, but are not limited to:

- Careers in the diplomatic corps;
- Positions with international organizations including The United Nations, World Trade Organization, World Bank, and others;
- Positions with multinational corporations as analysts and managers.

Bachelor of Arts in International Political Economy Degree Requirements (120 hours)

I. Core Curriculum Requirements: 43 hours
   A. Communication (6 hours)
      3 hours Communication (RHET 1302)
      3 hours Communication Elective (PSCI 3325)²
   B. Social and Behavioral Sciences (15 hours)
      6 hours Government (GOVT 2301 and 2302)
      6 hours American History (HIST 1301 and 1302)
      3 hours Economics Elective (ECON 2301)²
   C. Humanities and Fine Arts (6 hours)
      3 hours Fine Arts (ARTS 1301)
      3 hours Humanities (HUMA 1301)
   D. Mathematics and Quantitative Reasoning (7 hours)³
      3 hours Mathematics (at or above College Algebra MATH 1314)
      4 hours Quantitative Reasoning (SOCS 3405)²
   E. Science (9 hours including at least one course with a substantial laboratory component)

II. Major Requirements: 27 hours
   Major Core Courses
   - ECON 2302 Principles of Microeconomics
   - ECON 3370 The Global Economy
   - GEOG 2303 People and Place: An Introduction to World Geographic Regions
   - GEOG 3304 Tools for Spatial Analysis
   - PSCI 4329 Global Politics
   - PSCI 4356 International Political Economy
   - ISSS 3349 World Resources and Development
   - LIT 3304 Advanced Composition
   - SOC 3333 Religion in Society

III. Elective Requirements: 50 hours
    History – Upper Division (6 hours)
    International Political Economy (18 hours)
    All students are required to take at least eighteen hours of advanced electives from approved courses in economics, geography, political science, or sociology.
    Area Electives (14 hours)
    This requirement may be satisfied with upper-division courses from any given area within IPEC and related fields of study. Students must complete at least 51 hours of upper-division credit to qualify for graduation.
    Foreign Language Requirement (12 hours)
Four consecutive semesters in one language of choice
or
If the language credit is obtained without requiring to take classes, 12 hours of Free Electives (upper-division or lower-division) can be taken by student

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.
2 A Major requirement that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum above.
3 Students wishing to pursue Master’s or Ph.D. degrees in economics should consult their advisor about appropriate mathematics and quantitative methods courses.

Bachelor of Science in International Political Economy Degree Requirements (120 hours)

I. Core Curriculum Requirements: 43 hours
   A. Communication (6 hours)
      3 hours Communication (RHET 1302)
      3 hours Communication Elective (ECON 4382)²
   B. Social and Behavioral Sciences (15 hours)
      6 hours Government (GOVT 2301 and 2302)
      6 hours American History (HIST 1301 and 1302)
      3 hours Economics Elective (ECON 2301)²
   C. Humanities and Fine Arts (6 hours)
      3 hours Fine Arts (ARTS 1301)
      3 hours Humanities (HUMA 1301)
   D. Mathematics and Quantitative Reasoning (7 hours)³
      3 hours Mathematics (MATH 1325)
      4 hours Quantitative Reasoning (SOCS 3405)²
   E. Science (9 hours including at least one course with a substantial laboratory component)

II. Major Requirements: 34 hours
    Major Core Courses
    ECON 2302 Principles of Microeconomics
    ECON 3310 Intermediate Microeconomic Theory
    ECON 3311 Intermediate Macroeconomic Theory
    ECON 4360 International Trade
    GEOG 2303 People and Place: An Introduction to World Geographic Regions
    GEOG 3304 Tools for Spatial Analysis
    ISSS 3349 World Resources and Development
    LIT 3304 Advanced Composition
    PSCI 4329 Global Politics
    PSCI 4356 International Political Economy
    SOC 3333 Religion in Society

III. Elective Requirements: 44 hours
     History – Upper Division (6 hours)
     International Political Economy (18 hours)
        All students are required to take at least eighteen hours of advanced electives from approved courses in economics, geography, political science, or sociology.
     Area Electives (8 hours)
        This requirement may be satisfied with upper-division courses from any given area within IPEC and related fields of study. Students must complete at least 51 hours of upper-division credit to qualify for graduation.
     Foreign Language Requirement (12 hours)
        Four consecutive semesters in one language of choice
        or
If the language credit is obtained without requiring to take classes, 12 hours of Free Electives (upper-division or lower-division) can be taken by student.

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

2 A Major requirement that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum above.

3 Students wishing to pursue Master’s or Ph.D. degrees in economics should consult their advisor about appropriate mathematics and quantitative methods courses.

Minor in International Political Economy (18 hours)

Please see your advisor for the latest requirements for this minor.

Political Science (B.A.)

Political Science involves the study of interesting and important topics about citizenship, government and politics. These topics include the influence of citizens on what government does, the scope, responsibilities and effectiveness of government itself, and the activities of both elected and appointed public officials. These topics are important parts of what political scientists know about American government and politics, comparative government and politics, international relations, political behavior, political economy, political institutions, and political theory. Political scientists and public administrators pay particular attention to the design, implementation, and evaluation of laws and public policies that may affect people’s well-being.

The Political Science Program at The University of Texas at Dallas provides:

1. the foundations for more advanced, graduate study of citizenship, government and politics in Political Science;
2. the special core knowledge needed for subsequent professional education in law and public policy analysis;
3. the opportunity to acquire useful skills for careers in federal, state, and local government, community service, educational, and other nonprofit organizations, and business firms.

Bachelor of Arts in Political Science

Degree Requirements (120 hours)

I. Core Curriculum Requirements1: 42 hours

A. Communication (6 hours)
   3 hours Communication (RHET 1302)
   3 hours Communication Elective (PSCI 3325)

B. Social and Behavioral Sciences (15 hours)
   6 hours Government (GOVT 2301 and 2302)
   6 hours American History
   3 hours Social and Behavioral Sciences Elective (SOC 1301, CRIM 1301, ECON 2301, or ECON 2302)

C. Humanities and Fine Arts (6 hours)
   3 hours Fine Arts (ARTS 1301)
   3 hours Humanities (HUMA 1301)

D. Mathematics and Quantitative Reasoning (6 hours)
   3 hours Mathematics (at or above level of College Algebra, recommended: MATH 1306 or 1314)
   4 hours Quantitative Reasoning (SOCS 3405)

E. Science (9 hours including at least one course with a substantial laboratory component)

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: 55 hours

GOVT 2301 Constitutional Foundations and Political Behavior in the U.S. and Texas
GOVT 2302 Political Institutions in the U.S. and Texas
PSCI 3325 American Public Policy
SOCS 3405 Introduction to Social Statistics with Lab

One of:

CRIM 1301 Introduction to Criminal Justice
or ECON 2301 Principles of Macroeconomics
or ECON 2302 Principles of Microeconomics
or SOC 1301 Introduction to Sociology

Major Core Courses (18 hours)

PSCI 3301 Political Theory
PSCI 3322 Constitutional Law
PSCI 3333 Political Behavior
PSCI 3362 American Political Institutions
PSCI 4329 Global Politics

One of the following:

CRIM 3301 Theories of Justice
PSCI 3303 Civil Liberties
PSCI 3326 Politics and Business
PSCI 3364 Campaigns and Elections
PSCI 4364 Civil Rights Law and Society

Major Core Concentration (9 hours)

Three courses from one of the following concentrations:

Theory Concentration

PSCI 3306 Political Economy
PSCI 3323 American Federalism
PSCI 4330 The Bible and Politics
PSCI 4354 Contemporary Political Thought

Law Concentration

PSCI 3303 Civil Liberties
PSCI 3351 Comparative Courts and Law
PSCI 3353 Law and Gender
PSCI 4341 Politics of the Judicial Process
PSCI 4345 Negotiation and Conflict Resolution
PSCI 4357 Human Rights and the Rule of Law
PSCI 4364 Civil Rights Law and Society
PSCI 4365 Law and Medicine

American Politics Concentration

PSCI 3310 Public Administration
PSCI 3323 American Federalism
PSCI 3340 Film and Politics
PSCI 3364 Campaigns and Elections
PSCI 4311 The Political Economy of Modern Texas
PSCI 4326 Political Parties and Interest Groups
PSCI 4342 Legislative Decision Making
PSCI 4343 Congress and Public Policy
PSCI 4344 Race and Redistricting
PSCI 4349 The Politics of the Bureaucratic Process
PSCI 4364 Civil Rights Law and Society
PSCI 4368 Leadership

Global Politics Concentration

PSCI 3327 American Foreign Policy
PSCI 3328 International Relations
PSCI 3350 Comparative Politics
PSCI 3351 Comparative Courts and Law
PSCI 4331 Mexican Politics
PSCI 4332 Latin American Politics
PSCI 4346 War and Peace
PSCI 4347 The War on Drugs
PSCI 4348 Terrorism
PSCI 4356 International Political Economy
PSCI 4357 Human Rights and the Rule of Law

Public Policy Concentration
PSCI 3326 Politics and Business
PSCI 3327 American Foreign Policy
PSCI 3353 Law and Gender
PSCI 3364 Campaigns and Elections
PSCI 4326 Political Parties and Interest Groups
PSCI 4343 Congress and Public Policy
PSCI 4347 The War on Drugs
PSCI 4349 The Politics of the Bureaucratic Process

Major Related Courses (27 hours)
27 hours Major and Related electives

Most students take upper-division PSCI courses. However, subject to advisor approval, courses from other disciplines may be used to satisfy this requirement.

III. Elective Requirements: 23 hours
Advanced Electives (6 hours)
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.
Free Electives (17 hours)
This requirement may be satisfied with lower- and upper-division courses from any field of study. Students must complete at least 51 hours of upper-division credit to qualify for graduation.

Minor in Political Science (18 hours)
For a minor in Political Science, students must take GOVT 2301 and GOVT 2302. In addition students must take four upper-division courses with a PSCI prefix with the exception of PSCI 4V97, PSCI 4V98, and PSCI 4V99.

Public Affairs (B.S.)
The Bachelor of Science in Public Affairs is intended for individuals called upon to manage in the arenas of government, nonprofits, or business. These generalist managers must synthesize many forms of knowledge derived from government, economics, sociology, and other fields, and must apply that knowledge creatively to meet the varied and multiple challenges of public administration. The ability to understand the substance of policy and program issues; the ability to grasp the administrative, political, and ethical implications imbedded in them; and the ability then to act upon the issues with effect, together define the worth of contemporary managers.

The Public Affairs program promotes acquisition of knowledge and skills essential to the tasks of identification, analysis, design implementation, supervision, evaluation, communication, and other key functions that are integral components of management careers in federal, state, and local governments; criminal justice; in social service, education, community development, arts and other nonprofit organizations; and in business firms.

Bachelor of Science in Public Affairs
Degree Requirements (120 hours)
I. Core Curriculum Requirements: 42 hours
A. Communication (6 hours)
   3 hours Communication (RHET 1302)
   3 hours Communication Elective (PA 3377)
B. Social and Behavioral Sciences (15 hours)
   6 hours Political Science (GOVT 2301 and 2302)
6 hours American History
3 hours Social and Behavioral Sciences Elective (SOC 1301, SOC 2319, CRIM 1301, or CRIM 1307)\(^1\)
C. Humanities and Fine Arts (6 hours)
3 hours Fine Arts (ARTS 1301)
3 hours Humanities (HUMA 1301)
D. Mathematics and Quantitative Reasoning (6 hours)
3 hours Mathematics (at or above level of College Algebra, recommended: MATH 1306 or 1314)
3 hours Quantitative Reasoning (SOCS 3405)\(^2\)
E. Science (9 hours including at least one course with a substantial laboratory component)

\(^1\) Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: 49 hours
Major Preparatory Courses (3 hours)
ECON 2301 Principles of Macroeconomics
or ECON 2302 Principles of Microeconomics
Major Core Courses (28 hours)
PA 3304 Research Methods in Public Administration
PA 3310 Public Administration
PA 3333 Human Resources Management
PA 3377 Urban Planning and Policy\(^2\)
PA 4312 Organizations
PA 4360 Ethics in Public Administration
PSCI 3322 Constitutional Law
PSCI 3328 International Relations
SOCS 3405 Introduction to Social Statistics with Lab\(^2\)
Major Related Courses (24 hours)
24 hours Major and Related electives\(^3\)

\(^2\) A Major requirement that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.
\(^3\) Most students take upper-division PA courses. However, subject to advisor approval, courses from other disciplines may be used to satisfy this requirement.

III. Elective Requirements: 29 hours
Advanced Electives (6 hours)
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.
Free Electives (23 hours)
This requirement may be satisfied with lower- and upper-division courses from any field of study. Students must complete at least 51 hours of upper-division credit to qualify for graduation.

Minor in Public Affairs (18 hours)
For a minor in Public Administration, students must take PA/ PSCI 3310, PA 3333, PA 4312/SOC 4340; and any nine semester hours of upper-division classes with a PA prefix with the exception of PA 4V97, PA 4V98, and PA 4V99 or from the following list of courses: ECON 4320, ECON 4330, ECON 3370, ECON 3385, ECON 4342, PSCI 3326.

Sociology (B.A.)
Sociologists analyze the structure of groups in society and the way these groups influence the behavior of individuals. Related to these larger ideas are many specific questions: What explains inequalities? Why do crime and deviance arise? How do families, schools, churches, and corporations effect social control? What are the functions of welfare programs? How do cities grow and change to reflect changing technologies and population trends? How does law interact with society? These are examples of sociological questions.
The mission of the B.A. program in Sociology is to provide undergraduate students (both majors and non-majors) with broad knowledge of the theoretical concepts, empirical research findings, and methodological approaches of the discipline of sociology, with an emphasis on theory and research related to social inequality. The program objectives are that sociology majors should gain mastery of these concepts, findings, and approaches central to sociology, as well as develop basic skills in empirical analysis and professional communication in the analysis of social structures, processes, and institutions.

At The University of Texas at Dallas, sociology majors are encouraged to go beyond scholarly study to explore the ways that sociology can be put to use in businesses, government, or voluntary organizations. Sociology graduates of the university have pursued careers or graduate study in a variety of areas including policy research, social services, business, law, law enforcement, and other social sciences.

**Bachelor of Arts in Sociology**

**Degree Requirements (120 hours)**

I. **Core Curriculum Requirements**: 42 hours

A. Communication (6 hours)
   3 hours Communication (RHET 1302)
   3 hours Communication Elective (SOC 3306)\(^2\)

B. Social and Behavioral Sciences (15 hours)
   6 hours Government (GOVT 2301 and 2302)
   6 hours American History
   3 hours Social and Behavioral Sciences Elective (SOC 1301)

C. Humanities and Fine Arts (6 hours)
   3 hours Fine Arts (ARTS 1301)
   3 hours Humanities (HUMA 1301)

D. Mathematics and Quantitative Reasoning (6 hours)
   3 hours Mathematics (at or above level of College Algebra, recommended: MATH 1306 or 1314)
   4 hours Quantitative Reasoning (SOCS 3405)\(^2\)

E. Science (9 hours including at least one course with a substantial laboratory component)

\(^1\) Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. **Major Requirements**: 46 hours

Major Preparatory Courses (3 hours)
- ECON 2301 Principles of Macroeconomics
- or ECON 2302 Principles of Microeconomics

Major Core Courses (22 hours)
- SOC 2319 Race, Gender, and Class
- SOC 3303 Social Theory
- SOC 3304 Research Methods in Sociology
- SOC 3306 Professional Writing for Sociology\(^2\)
- SOC 4302 Class, Status, and Power
- SOCS 3405 Introduction to Social Statistics with Lab\(^2\)

One of the following:
- SOC 3333 Religion in Society
- SOC 3336 Culture Regions
- SOC 4361 Law and Society

Major Related Courses (27 hours)
- 18 hours upper-division Sociology courses
- 9 hours Major and Related electives\(^3\)

\(^2\) A Major requirement that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.

\(^3\) Most students take upper-division SOC courses. However, subject to advisor approval, courses from other disciplines may be used to satisfy this requirement.
III. **Elective Requirements: 32 hours**

Advanced Electives (6 hours)

All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.

Free Electives (26 hours)

This requirement may be satisfied with lower- and upper-division courses from any field of study. Students must complete at least 51 hours of upper-division credit to qualify for graduation.

**Minor in Sociology (18 hours)**

For a minor in Sociology, students must take SOC 1301, SOC 3303, SOC 4302, and nine semester hours of upper-division classes with a SOC prefix with the exception of SOC 4V97, SOC 4V98, and SOC 4V99.
Erik Jonsson School of Engineering and Computer Science

Named in honor of one of the three founders of Texas Instruments, Inc. and of The University of Texas at Dallas, the Erik Jonsson School of Engineering and Computer Science provides undergraduate degree preparation for professional practice as an engineer or computer scientist. Particular emphasis is placed on developing strong analytical and problem solving abilities as a foundation for graduate study in these fields.

The school’s curricula emphasize electronic information processing devices and technologies that are involved with the acquisition, interpretation, transmission, and utilization of information. The school offers five degree programs: Computer Engineering, Computer Science, Electrical Engineering, Software Engineering and Telecommunications Engineering. The Computer Science program emphasizes the design and analysis of efficient parallel and sequential algorithms with applications in VLSI layout and routing, distributed networks and operating systems, image processing, computational geometry, automation and robotics. The Software Engineering program concentrates on all aspects of software development including requirements engineering, software architecture and design, program testing, validation, and quality assurance. The Electrical Engineering program offers students an opportunity to acquire a solid foundation in the broad areas of electrical engineering and emphasizes advanced study in digital systems, telecommunications, and microelectronics. The Computer Engineering and Telecommunications Engineering programs are interdisciplinary as they require a blend of knowledge from the areas of Electrical Engineering and Computer Science.

All programs are based on a solid foundation of science and mathematics coursework. Students in these programs are given an opportunity to learn to extend their abilities to analyze and solve complex problems and to design new uses of technology to serve today’s society. The Engineering programs provide an integrated educational experience directed toward the development of the ability to apply pertinent knowledge to the identification and solution of practical problems in engineering. These programs ensure that the design experience is developed and integrated throughout the curriculum in a sequential development leading to advanced work and includes both analytical and experimental studies. Established cooperative education programs with area industry further supplement design experiences.

The University of Texas at Dallas is located at the heart of a high concentration of companies that specialize in the areas of microelectronics, telecommunications, signal processing and optics. The Erik Jonsson School of Engineering and Computer Science maintains close relationships with these companies and has established cooperative programs through which students can obtain industrial experience to complement their classroom instruction. Details of specific cooperative programs between Computer Science and Engineering students and local companies are available in the respective program offices.

Industrial Practice Programs

The Industrial Practice Programs (IP Programs or IPP) of the Erik Jonsson School of Engineering and Computer Science include the school’s Cooperative Education, Internship, and Curricular Practical Training Programs. These programs combine classroom learning with paid work experience. Qualified students are referred to participating employers seeking candidates for career-related, pre-professional work assignments. The programs enhance a student’s education and career preparation by integrating classroom theory with on-the-job performance, providing an understanding of work environments and professional requirements, testing career and professional goals, developing confidence, maturity and skills in human relations, and establishing contacts and interests.

Students are expected to register with and follow the rules of the IP Programs when working in any position titled by the employer as an Internship or a Cooperative Education assignment. Also, the Jonsson School offers one credit hour ECSC courses that may fill UTD free elective requirements and provide students the opportunity to evaluate their work experience.

For more information about the IP programs, call (972)883-4363. The IP Programs Office is located in the Student Services suite (ECS South 2.502).
Department of Computer Science

Computer Science (B.S.) and Software Engineering (B.S.S.E)

Faculty

Professors: Farokh Bastani, Ramaswamy Chandrasekaran, Ding-Zhu Du, András Faragó, Gopal Gupta, Dung T. Huynh, Dan Moldovan, Simeon C. Ntafos, Balaji Raghavachari, Hsing-Mean (Edwin) Sha, Ivan H. Sudborough, Bhavani Thuraisingham, Klaus Truemper (Emeritus), I-Ling Yen, Kang Zang, Si-Qing Zheng


Assistant Professors: Joao Cangussu, Kendra M.L. Cooper, Jing Dong, Xiaohu Guo, Kevin Hamlen, Murat Kantarcioglu, Yang Liu, Ying Liu, Neeraj Mittal, Vincent Ng, Kamil Sarac, Weili Wu

Senior Lecturers: Tim Farage, Herman Harrison, Sam Karrah, Lawrence King, Greg Osbírn, Cort Steinhorst, Laurie Thompson, Nancy Van Ness

The Computer Science Department offers the B.S. degree in Computer Science and the B.S. degree in Software Engineering. Both are based on a solid foundation of mathematics, including calculus, linear algebra, and discrete mathematics. These programs of study are designed to offer students opportunities to prepare for an industrial, business, or governmental career in a rapidly changing profession and to prepare for graduate study in a field in which further education is strongly recommended. The two programs have the same basis in core computer science, including the analysis of algorithms and data structures, modern programming methodologies, and the study of operating systems. The Computer Science program continues with courses in advanced data structures, programming languages, telecommunications networks, and automata theory, while the Software Engineering program include courses in requirements engineering, software validation and testing, and software architecture, culminating in a challenging project course in which students must demonstrate use of software engineering techniques. Both programs offer a rich choice of elective studies, including courses in artificial intelligence, computer graphics, databases, and compiler design.

The school offers a “fast track” B.S. / M.S. option; see Fast Track Baccalaureate/Master’s Degree Program.

Mission of the Department of Computer Science

The mission of the Department of Computer Science is to prepare undergraduate and graduate students for productive careers in industry, academia, and government by providing an outstanding environment for teaching, learning, and research in the theory and applications of computing. The Department places high priority on establishing and maintaining innovative research programs to enhance its education quality and make it an important regional, national, and international resource center for discovering, integrating, and applying new knowledge and technologies.

Goals for the Computer Science Program

The undergraduate Computer Science program is committed to provide students with a high-quality education and prepare them for long and successful careers in industry and government.

Our graduates, while eminently ready for immediate employment, will also be fully ready for focused training as required for specific positions in Computer Science and closely related areas. Graduates interested in highly technical careers, research, and/or academia will be fully prepared to further their education in graduate school.

Educational Objectives for the Computer Science Program

On completion of the BS program, students will:

1. have a comprehensive general education background;
2. have solid knowledge in fundamental areas of Computer Science;
3. have the ability to apply their knowledge to the solution of practical and useful problems;
4. have the ability to communicate effectively and work collaboratively;
5. be able to become successful professionals and, if they desire, be able to pursue graduate study;
6. recognize the need for lifelong learning and have the knowledge and skills that prepare them to adapt to rapid
technological changes; and
7. understand the ethical, societal, and global issues associated with the computing field.

**Bachelor of Science in Computer Science**

**Degree Requirements (125 hours)**

I. **Core Curriculum Requirements:** 42 hours

A. Communication (6 hours)
   - 3 hours Communication (RHET 1302)
   - 3 hours Professional and Technical Communication (ECS 3390)  
B. Social and Behavioral Sciences (15 hours)
   - 6 hours Government (GOVT 2301 and 2302)
   - 6 hours American History
   - 3 hours Social and Behavioral Science (ECS 3361)
C. Humanities and Fine Arts (6 hours)
   - 3 hours Fine Arts (ARTS 1301)
   - 3 hours Humanities (HUMA 1301)
D. Mathematics and Quantitative Reasoning (6 hours)
   - 6 hours Calculus (MATH 2413, 2414 or MATH 2417, 2419)  
E. Science (9 hours)
   - 6 hours Lecture courses (PHYS 2325 and 2326)  
   - 2 hours Laboratory courses (PHYS 2125 and 2126)  
   - 4 hours Science Elective

Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. **Major Requirements: 62 hours**

Major Preparatory Courses (18 hours beyond Core Curriculum)
- CS 1337 Computer Science I
- CS 2305 Discrete Mathematics for Computing I
- CS 2336 Computer Science II
- MATH 2413 Differential Calculus
  - or MATH 2417 Calculus I  
- MATH 2418 Linear Algebra
- MATH 2414 Integral Calculus
  - or MATH 2419 Calculus II  
- PHYS 2125 Physics Laboratory I  
- PHYS 2126 Physics Laboratory II  
- PHYS 2325 Mechanics  
- PHYS 2326 Electromagnetism and Waves  
- 4 hours Science Elective

Major Core Courses (35 hours beyond Core Curriculum)
- CS 3305 Discrete Mathematics for Computing II
- CS 3340 Computer Architecture
- CS 3341 Probability and Statistics in Computer Science and Software Engineering
- CS 3345 Data Structures and Introduction to Algorithmic Analysis
- CS 3354 Software Engineering
- CS 4141 Digital Systems Laboratory
- CS 4337 Organization of Programming Languages
- CS 4341 Digital Logic and Computer Design
- CS 4348 Operating Systems Concepts
CS 4349 Advanced Algorithm Design and Analysis
CS 4384 Automata Theory
CS 4485 Computer Science Project
ECS 3361 Social Issues and Ethics in Computer Science and Engineering
ECS 3390 Professional and Technical Communication

Major Guided Electives (9 hours)
CS guided electives are 4000 level CS courses approved by the student’s CS advisor. The following courses may be used as guided electives without the explicit approval of an advisor:

- CS 4314 Intelligent Systems Analysis
- CS 4315 Intelligent Systems Design
- CS 4334 Numerical Analysis
- CS 4336 Advanced Java
- CS/SE 4347 Database Systems
- CS 4352 Human Computer Interactions I
- CS 4353 Human Computer Interactions II
- CS 4361 Computer Graphics
- CS 4365 Artificial Intelligence
- CS 4375 Introduction to Machine Learning
- CS 4376 Object-Oriented Programming Systems
- CS 4386 Compiler Design
- CS 4389 Data and Applications Security
- CS 4390 Computer Networks
- CS 4391 Introduction to Computer Vision
- CS 4392 Computer Animation
- CS 4393 Computer and Network Security
- CS 4394 Implementation of Modern Operating Systems
- CS 4396 Networking Laboratory
- CS 4397 Embedded Computer Systems
- CS 4398 Digital Forensics
- CS 4399 Senior Honors in Computer Science/Software Engineering
- EE 4325 Introduction to VLSI Design
- SE 4351 Requirements Engineering
- SE 4352 Software Architecture and Design
- SE 4367 Software Testing, Verification, Validation and Quality Assurance
- SE 4381 Software Project Planning and Management
- SE 4485 Software Engineering Project

2 Hours fulfill the communication elective of the Core Curriculum.
3 Six hours of Calculus are counted under Mathematics Core, and two hours of Calculus are counted as Major Preparatory Courses.
4 Nine hours of Science are counted under Science Core. Three hours are counted under Major Preparatory Courses. Students should consult an advisor for specific classes that satisfy this requirement.
5 Hours contribute to the Social and Behavioral Sciences component of the Core Curriculum

III. Elective Requirements: 21 hours

Advanced Electives (6 hours)
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.

Free Electives (15 hours)
All students must accumulate at least 120 hours of university credit to graduate. Both lower- and upper-division courses may count as free electives but students must complete at least 51 hours of upper-division credit to qualify for graduation. Not all courses offered by the University can be used as a free elective. Please consult with your advisor.

At least 9 hours of electives (out of the 21 hours required) must be outside Science and Engineering. At least 6 hours (out of the designated 21) should be in Humanities, Arts, and other areas that broaden the student’s educational experience. Consult an advisor for specific classes.
Fast Track Baccalaureate/Master’s Degrees
In response to the need for post-baccalaureate education in the exciting field of computer science, a Fast Track program is available to exceptionally well-qualified students who choose their courses carefully. At the end of five years of successful study, it is possible to earn both the B.S. and the M.S. degrees in Computer Science (or M.S. in Computer Science with Major in Software Engineering). Being within 30 hours of graduation, a student admitted to the graduate program and accepted into the Fast Track program may, during the senior year, take 15 graduate hours that may be used to complete the baccalaureate degree and also to satisfy requirements for the master’s degree.

Interested students should see the Associate Dean of Undergraduate Education (ADU) for specific admission requirements to the Fast Track program.

Honors Programs
The Department of Computer Science offers upper-division Honors for outstanding students in both the B.S. in Computer Science and B.S. in Software Engineering degree programs. These programs offer special sections of designated classes and other activities designed to enhance the educational experience of exceptional students. Admission to the Honors programs requires a 3.50 or better GPA in at least 30 hours of coursework. Graduation with Honors requires a 3.50 or better GPA and completion of at least 6 honors classes, including a Senior Thesis or Senior Design Project class. For more details, contact the Office of Undergraduate Advising (ECS South 2.502; 972-883-2004).

Departmental Honors with Distinction may be awarded to students whose Senior Thesis or Senior Design Project is judged by a faculty committee to be of exemplary quality. Only students graduating with Departmental Honors are eligible. Thesis/projects must be submitted by the deadline that applies to M.S. Theses and Ph.D. Dissertations in the graduating semester to allow for proper evaluation. Students interested in Honors with Distinction are encouraged to start working on their thesis/project a year prior to graduation.

Minors
A minor in Computer Science requires 21 credit hours earned through the following courses:
- CS 1337 Computer Science I
- CS 2305 Discrete Mathematics for Computing I
- CS 2336 Computer Science II
- CS 3305 Discrete Mathematics for Computing II
- CS 3345 Data Structures and Introduction to Algorithmic Analysis
- CS 3354 Software Engineering
- CS 43XX Elective (any 4000-level organized CS class)

A minor in Information Assurance requires 30 credit hours earned through the following courses:
- CS 1337 Computer Science I
- CS 2305 Discrete Mathematics for Computing I
- CS 2336 Computer Science II
- CS 3305 Discrete Mathematics for Computing II
- CS 3345 Data Structures and Introduction to Algorithmic Analysis
- CS 4347 Database Systems
- CS 4348 Operating Systems Concepts
- CS 4389 Data and Applications Security
- CS 4393 Computer and Network Security
- CS 4398 Digital Forensics

Certificates
A Certificate in Information Assurance can be obtained by completing the following (as well as any required prerequisites):
- CS 4389 Data and Applications Security
- CS 4393 Computer and Network Security
The certificate is intended for those individuals who are working in the industry and who already have background similar to a BS-CS degree. CS and SE majors that complete the required classes, as well as students that complete the Minor in Information Assurance will be awarded certificates in Information Assurance.

**Goals of the Software Engineering Program**

The focus of the Software Engineering degree is to provide world class education in modern software engineering. The overall goals of the Bachelor of Science in Software Engineering Program are:

1. To prepare students for software engineering positions in industry or government;
2. To prepare students for graduate study in Software Engineering; and
3. To provide a solid foundation in Computer Science and Software Engineering principles that will allow graduates to adapt effectively in a quickly changing field.

**Educational Objectives of the Software Engineering Program**

The current objectives for graduates of the Bachelor of Science in Software Engineering Program are to:

1. effectively apply knowledge of programming, algorithms, data structures, and software engineering to the development of complex software systems;
2. communicate technical concepts effectively in both written documents and oral presentations;
3. design and analyze software at the component, subsystem, and software architecture levels and make informed, sound software design tradeoffs;
4. understand the social and ethical issues that arise in their work and deal with them professionally;
5. understand the importance of all phases of the software lifecycle, with emphasis on the need to plan for change and continuously vie to improve the software process;
6. work effectively in a software development team and with other engineering professionals;
7. appreciate the need for lifelong learning and adapt to rapid technological changes.

**Bachelor of Science in Software Engineering**

**Degree Requirements (124 hours)**

I. **Core Curriculum Requirements**: 42 hours

A. Communication (6 hours)
   3 hours Communication (RHET 1302)
   3 hours Professional and Technical Communication (ECS 3390)

B. Social and Behavioral Sciences (15 hours)
   6 hours Government (GOVT 2301 and 2302)
   6 hours American History
   3 hours Social and Behavioral Science (ECS 3361)

C. Humanities and Fine Arts (6 hours)
   3 hours Fine Arts (ARTS 1301)
   3 hours Humanities (HUMA 1301)

D. Mathematics and Quantitative Reasoning (6 hours)
   6 hours Calculus (MATH 2413, 2414 or MATH 2417, 2419)

E. Science (9 hours)
   6 hours Lecture courses (PHYS 2325 and 2326)
   2 hours Laboratory courses (PHYS 2125 and 2126)
   4 hours Science Elective

1Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.
II. **Major Requirements: 64 hours**

Major Preparatory Courses (18 hours beyond Core Curriculum)
- CS 1337 Computer Science I
- CS 2305 Discrete Mathematics for Computing I
- CS 2336 Computer Science II
- MATH 2413 Differential Calculus
  - or MATH 2417 Calculus I
- MATH 2418 Linear Algebra
- MATH 2414 Integral Calculus
  - or MATH 2419 Calculus II
- PHYS 2125 Physics Laboratory I
- PHYS 2126 Physics Laboratory II
- PHYS 2325 Mechanics
- PHYS 2326 Electromagnetism and Waves
- 4 hours Science Elective

Major Core Courses (34 hours beyond Core Curriculum)
- ECS 3361 Social Issues and Ethics in Computer Science and Engineering
- ECS 3390 Professional and Technical Communication
- SE 3306 Mathematical Foundations of Software Engineering
- SE 3340 Computer Architecture
- SE 3341 Probability and Statistics in Computer Science and Software Engineering
- SE 3345 Data Structures and Introduction to Algorithmic Analysis
- SE 3354 Software Engineering
- SE 4348 Operating Systems Concepts
- SE 4351 Requirements Engineering
- SE 4352 Software Architecture and Design
- SE 4367 Software Testing, Verification, Validation and Quality Assurance
- SE 4381 Software Project Planning and Management
- SE 4485 Software Engineering Project

Major Guided Electives (12 hours)
SE guided electives are 4000 level CS/SE courses approved by the student's CS/SE advisor. The following courses may be used as guided electives without the explicit approval of an advisor:
- CS 4141 Digital Systems Laboratory
- CS 4314 Intelligent Systems Analysis
- CS 4315 Intelligent Systems Design
- CS 4334 Numerical Analysis
- CS 4337 Organization of Programming Languages
- CS 4341 Digital Logic and Computer Design
- CS 4349 Advanced Algorithm Design and Analysis
- CS 4352 Human Computer Interactions I
- CS 4353 Human Computer Interactions II
- CS 4361 Computer Graphics
- CS 4365 Artificial Intelligence
- CS 4375 Introduction to Machine Learning
- CS 4384 Automata Theory
- CS 4386 Compiler Design
- CS 4389 Data and Applications Security
- CS 4390 Computer Networks
- CS 4391 Introduction to Computer Vision
- CS 4392 Computer Animation
- CS 4393 Computer and Network Security
- CS 4394 Implementation of Modern Operating Systems
- CS 4396 Networking Laboratory
- CS 4397 Embedded Computer Systems
- CS 4398 Digital Forensics
CS 4485 Computer Science Project
EE 4325 Introduction to VLSI Design
SE 4347 Database Systems
SE 4376 Object Oriented Programming Systems
SE 4399 Senior Honors in Computer Science/Software Engineering

Application Domains (9 hours)
An important aspect of Software Engineering education is the use of software engineering concepts in a particular application domain. Students should use two of their three guided electives to complete one of the applications domains below. Additional application domains may become available. Completing an application domain may require careful scheduling since many of these classes will not be offered every semester. It is strongly encouraged that you consult with an advisor.

Networks (9 hours)
CS 4390 Computer Networks
CS 4393 Computer and Network Security
CS 4396 Networking Laboratory

Information Assurance (9 hours)
CS 4389 Data and Applications Security
CS 4393 Computer and Network Security
CS 4398 Digital Forensics

Embedded Systems (9 hours)
CS 4141 Digital Systems Laboratory
CS 4341 Digital Logic and Computer Design
CS 4397 Embedded Computer Systems
SE 4348 Operating Systems Concepts

Computer Imaging (9 hours)
CS 4361 Computer Graphics
CS 4391 Introduction to Computer Vision
CS 4392 Computer Animation

Artificial Intelligence and Cognitive Modeling (9 hours; take 3 of 4)
CS 4314 Intelligent Systems Analysis
CS 4315 Intelligent Systems Design
CS 4365 Artificial Intelligence
CS 4375 Introduction to Machine Learning

Human-Computer Interaction (9 hours)
CS 4352 Human Computer Interactions I
CS 4353 Human Computer Interactions II
CS 4361 Computer Graphics

2 Hours fulfill the communication elective of the Core Curriculum.
3 Six hours of Calculus are counted under Mathematics Core, and two hours of Calculus are counted as Major Preparatory Courses.
4 Nine hours of Science are counted under Science Core. Three hours are counted as Major Preparatory Courses. Students should consult an advisor for specific classes that satisfy this requirement.
5 Hours contribute to the Social and Behavioral Sciences component of the Core Curriculum

III. Elective Requirements: 18 hours
Advanced Electives (6 hours)
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.
Free Electives (12 hours)
All students must accumulate at least 124 hours of university credit to graduate. Both lower- and upper-division courses may count as free electives but students must complete at least 51 hours of upper-division credit to qualify for graduation. Not all courses offered by the University can be used as a free elective. Please consult with your advisor.

**Fast Track Baccalaureate/Master’s Degrees**

In response to the need for post-baccalaureate education in the exciting field of software engineering, a Fast Track program is available to exceptionally well-qualified students who choose their courses carefully. At the end of five years of successful study, it is possible to earn both the B.S. degree in Software Engineering and the M.S. degree in Computer Science or the M.S. degree in Computer Science with Major in Software Engineering. Being within 30 hours of graduation, a student admitted to the graduate program and accepted into the Fast Track program may, during the senior year, take 15 graduate hours that may be used to complete the baccalaureate degree and also to satisfy the requirements for the master’s degree.

Interested students should see the Associate Dean of Undergraduate Education (ADU) for specific admission requirements to the Fast Track program.

**Honors Programs**

The Department of Computer Science offers upper-division Honors for outstanding students in both the B.S. in Computer Science and B.S. in Software Engineering degree programs. These programs offer special sections of designated classes and other activities designed to enhance the educational experience of exceptional students. Admission to the Honors programs requires a 3.50 or better GPA in at least 30 hours of coursework. Graduation with Honors requires a 3.50 or better GPA and completion of at least 6 honors classes, including a Senior Thesis or Senior Design Project class. For more details, contact the Office of Undergraduate Advising (ECS South 2.502; 972-883-2004).

Departmental Honors with Distinction may be awarded to students whose Senior Thesis or Senior Design Project is judged by a faculty committee to be of exemplary quality. Only students graduating with Departmental Honors are eligible. Thesis/projects must be submitted by the deadline that applies to M.S. Theses and Ph.D. Dissertations in the graduating semester to allow for proper evaluation. Students interested in Honors with Distinction are encouraged to start working on their thesis/project a year prior to graduation.

**Minors**

A minor in Software Engineering requires 21 credit hours earned through the following courses:

- CS 1337 Computer Science I
- CS 2305 Discrete Mathematics for Computing I
- CS 2336 Computer Science II
- SE 3306 Mathematical Foundations of Software Engineering
- SE 3345 Data Structures and Introduction to Algorithmic Analysis
- SE 3354 Software Engineering
- SE 43XX Elective (any 4000-level organized SE class)

**Department of Electrical Engineering**

**Electrical Engineering (B.S.E.E.)**

**Faculty**

The Electrical Engineering Department offers a bachelor’s degree in Electrical Engineering. The Electrical Engineering program offers students an opportunity to acquire a solid foundation in the broad areas of electrical engineering and emphasizes advanced study in digital systems, telecommunications, and microelectronics.

The Electrical Engineering program offers students a solid educational foundation in the areas of electrical networks, electronics, electromagnetics, computers, digital systems, and communications and is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). Mastery of these areas provides students with the ability to adapt and maintain leadership roles in their post-baccalaureate pursuits through the application of fundamental principles to a rapidly changing and growing discipline.

Students in the Electrical Engineering program a broad general program in electrical engineering and can then take advanced courses in computer hardware and software; the analysis and design of analog and digital communication systems; analog and digital signal processing; the analysis, design, and fabrication of microelectronic components and systems; and guided and unguided wave propagation. A broad choice of electives (within and external to electrical engineering) allows students to broaden their education as well as develop expertise in areas of particular interest. In keeping with the role of a professional, students are expected to develop communication skills and an awareness of the relationship between technology and society.

The Electrical Engineering program is based on a solid foundation of science and mathematics coursework. Students in this program are given an opportunity to learn and extend their abilities to analyze and solve complex problems and to design new uses of technology to serve today's society. The engineering programs at UTD provide an integrated educational experience directed toward the development of the ability to apply pertinent knowledge to the identification and solution of practical problems in Electrical and other related engineering fields. These programs ensure that the design experience, which includes both analytical and experimental studies, is integrated throughout the curriculum in a sequential development leading to advanced work. Design problems are frequently assigned in both lecture and laboratory courses. Each student is required to complete a major design project during the senior year. In addition, established cooperative education programs with area industry further supplement design experiences.

**Mission of the Electrical Engineering Program**

The focus of the Electrical Engineering degree is to provide excellent education in modern electrical engineering practice. Our graduates are uniquely qualified for rewarding and successful careers in materials, devices, circuits, digital systems, signal processing, and communications. In the spring of 2005 the EE faculty adopted a new set of Program Educational objectives which refined the prior objectives and established measurements and benchmarks to monitor progress. The ECS Office of Assessment developed a new Alumni Survey instrument to measure progress toward these objectives and conducted a preliminary survey to collect data. The results of this survey should be available in the fall of 2005. The Electrical Engineering faculty will set the thresholds for performance based on this survey in the fall of 2005.

**Specific Program Educational Objectives**

One broad goal for the Erik Jonsson School is an excellent education for our students. Our earlier Program Educational Objectives (PEOs) toward this goal are:

- Preparation for a successful, long-lived, engineering career
- Perform, review and assess sophisticated engineering design and manufacturing
- Further the necessities of innovation, functionality, safety, and economy in engineering
- Critical thinking, decision making and communicating
- Ability to contribute and to lead engineering teams
• Place engineering design and decision making in a market and societal context.

Additional Program Educational Objectives for a high quality educational infrastructure include:

• Growing and maintaining an outstanding faculty that remains motivated and empowers
• Excellent facilities, including teaching laboratories, computing facilities and classrooms with advanced presentation capabilities.

Our most recent set of Program Educational Objectives and the measurement associated with each is listed below:

• A successful long-lived engineering career. Measurement: The percentage of our graduates still working as engineers five (5) years after graduation.
• Meeting the needs of local industry. Measurement: The percentage of our graduates receiving job offers from the top twenty (20) local engineering firms.
• Leading engineering teams. Measurement: The percentage of our graduates lead engineering design team supervising two or more engineers in a designing effort within five (5) years after graduation.
• Actively use engineering skills to mentor and promote the engineering profession in populations still underrepresented in it. Measurement: The percentage of our graduates involved in such activities within five (5) years after graduation.
• Actively pursuing life-long learning. Measurement: The percentage of our graduates either attending graduate school or taking additional college level course work to enhance their skills five (5) years after graduation.

High School Preparation
Engineering education requires a strong high school preparation. Pre-engineering students should have high school preparation of at least one-half year in trigonometry and at least one year each in elementary algebra, intermediate and advanced algebra, plane geometry, chemistry, and physics, thus developing their competencies to the highest possible levels and preparing to move immediately into demanding college courses in calculus, calculus-based physics, and chemistry for science majors. It is also essential that pre-engineering students have the competence to read rapidly and with comprehension, and to write clearly and correctly.

Lower-Division Study
All lower-division students in either Electrical Engineering or Telecommunications Engineering concentrate on mathematics, science and introductory engineering courses, building competence in these cornerstone areas for future application in upper-division engineering courses. The following requirements apply both to students seeking to transfer to U.T. Dallas from other institutions as well as to those currently enrolled at U.T. Dallas, whether in another school or in the Erik Jonsson School of Engineering and Computer Science.

ABET Requirements
All engineering degree plans must satisfy the requirements specified by the Accreditation Board for Engineering and Technology (ABET). The course work must include at least:

1) One year (32 SCH) of an appropriate combination of mathematics and basic sciences,
2) One and one-half years (48 SCH) of engineering topics.
3) A general education component that complements the technical content.

Although the electrical engineering and telecommunications engineering curricula that follow have been designed to meet these criteria, students have the responsibility, in consultation with an advisor, to monitor their own choice of courses carefully to be certain that all academic requirements for graduation are being satisfied. Students are strongly encouraged to take courses in such subjects as accounting, industrial management, finance, personnel administration, and engineering economy.
### Academic Progress in Electrical Engineering

In order to make satisfactory academic progress as an Electrical Engineering major, a student must meet all University requirements for academic progress, and must earn a grade of C- or better in each of the major core courses. No "Major Requirement" course (as listed under Section II of the B.S.E.E. degree requirement) may be taken until the student has obtained a grade of C- or better in each of the prerequisites (if a higher grade requirement is stated for a specific class, the higher requirement applies).

### Bachelor of Science in Electrical Engineering

**Degree Requirements (128 hours)**

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<thead>
<tr>
<th>I. Core Curriculum Requirements 1: 42 hours</th>
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<tbody>
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<td><strong>D. Mathematics and Quantitative Reasoning (6 hours)</strong></td>
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<tr>
<td>6 hours Calculus (MATH 2417 and 2419)</td>
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<td><strong>E. Science (9 hours)</strong></td>
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<tr>
<td>8 hours Physics (PHYS 2325, 2125, 2326 and 2126)</td>
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<tr>
<td>4 hours Chemistry (CHEM 1311 and 1111)</td>
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1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

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<thead>
<tr>
<th>II. Major Requirements: 74 hours</th>
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<tbody>
<tr>
<td><strong>Major Preparatory Courses (20 hours beyond Core Curriculum)</strong></td>
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<tr>
<td>CHEM 1111 General Chemistry Laboratory</td>
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<td>CHEM 1311 General Chemistry</td>
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<td>CS 1337 Computer Science</td>
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<td>EE 1102 Introduction to Experimental Techniques</td>
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<td>EE 2110 Introduction to Digital Systems Laboratory</td>
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<td>EE 2300 Linear Algebra for Engineers</td>
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<td>EE 2310 Introduction to Digital Systems</td>
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<td>MATH 2417 Calculus I</td>
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<td>MATH 2419 Calculus II</td>
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<td>MATH 2420 Differential Equations with Applications</td>
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<td>PHYS 2125 Physics Laboratory I</td>
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<td>PHYS 2126 Physics Laboratory II</td>
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<td>PHYS 2325 Mechanics</td>
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<td>PHYS 2326 Electromagnetism and Waves</td>
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<tr>
<td><strong>Major Core Courses (45 hours beyond Core Curriculum)</strong></td>
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<tr>
<td>ECS 3361 Social Issues and Ethics in Computer Science and Engineering</td>
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<td>ECS 3390 Professional and Technical Communication</td>
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<td>EE 3101 Electrical Network Analysis Laboratory</td>
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<td>EE 3102 Signals and Systems Laboratory</td>
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<td>EE 3110 Electronic Devices Laboratory</td>
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<td>EE 3111 Electronic Circuits Laboratory</td>
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<tr>
<td>EE 3120 Digital Circuits Laboratory</td>
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<tr>
<td>EE 3150 Communications Systems Laboratory</td>
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EE 3300 Advanced Engineering Mathematics
EE 3301 Electrical Network Analysis
EE 3302 Signals and Systems
EE 3310 Electronic Devices
EE 3311 Electronic Circuits
EE 3320 Digital Circuits
EE 3341 Probability Theory and Statistics
EE 3350 Communications Systems
EE 4301 Electromagnetic Engineering I
EE 4310 Systems and Controls
EE 4368 RF Circuit Design Principles
EE 4388 Senior Design Project I
EE 4389 Senior Design Project II

Major Guided Electives (9 hours)
Students pursuing the general program take 9 semester hours from either list below.

Students pursuing a concentration in Microelectronics take 3 of the following courses:
- EE 4302 Electromagnetic Engineering II
- EE 4304 Computer Architecture
- EE 4325 Introduction to VLSI Design
- EE 4330 Integrated Circuit Technology
- EE 4340 Analog Integrated Circuit Analysis and Design
- EE 4341 Digital Integrated Circuit Analysis and Design
- EE 4391 Technology of Plasma Class and Laboratory

Students pursuing a concentration in Telecommunications take 3 of the following courses:
- EE 4360 Digital Communications
- EE 4361 Introduction to Digital Signal Processing
- EE 4365 Introduction to Wireless Communication
- EE 4367 Telecommunications Networks
- EE 4390 Computer Networks
- EE 4392 Introduction to Optical Systems

2 Six hours of Calculus are counted under Mathematics Core, and two hours of Calculus are counted as Major Preparatory Courses.
3 One hour of Chemistry is counted under Science core, and three hours are counted as Major Preparatory Courses.
4 Students must pass each of the EE, CS, Math and Science courses listed in this degree plan and each of their prerequisites, with a grade of C- or better.
5 Hours fulfill the communication component of the Core Curriculum
6 Hours contribute to the Social and Behavioral Sciences component of the Core Curriculum

III. Elective Requirements: 12 hours

Advanced Electives (6 hours)
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.

Free Electives (6 hours)
Both lower- and upper-division courses may count as free electives but students must complete at least 51 hours of upper-division credit to qualify for graduation. Not all courses offered by the University can be used as a free elective. Please consult with your advisor.

Fast Track Baccalaureate/Master’s Degrees
In response to the need for advanced education in electrical engineering, a Fast Track program is available to exceptionally well-qualified U.T. Dallas undergraduate students who meet the requirements for admission to the graduate school. The Fast Track program is designed to accelerate a student’s education so that both a B.S.E.E. and an M.S.E.E. degree can be earned in five years of full-time study. This is accomplished by (1) taking courses (typically electives) during one or more summer semesters, and (2) beginning graduate course work during the senior year. Details of the requirements for admission to this program are available from the Associate Dean.
Honors Program
The Department of Electrical Engineering offers upper-division Honors for outstanding students in the B.S. Electrical Engineering degree program. This program offers special sections of designated classes and other activities designed to enhance the educational experience of exceptional students. Admission to the Honors program requires a 3.50 or better GPA in at least 30 hours of coursework. Graduation with Honors requires a 3.50 or better GPA and completion of at least 6 honors classes. These honors classes must include either Senior Honors in Electrical Engineering (EE 4399) or Undergraduate Research in Electrical Engineering (EE 4V98) and a Senior Honors Thesis must be completed within one of those two classes. (While the topics may be related, the Senior Thesis does not replace the need for the student to complete a regular Senior Design Project). The other 5 honors classes can come from a mixture of Graduate level (up to a count of 4) classes and special honor sections of regular undergraduate EE classes (up to a count of 2). Current undergraduate honors courses include but are not limited to EE 2310(H), EE 3350(H), EE 4302, EE 4399, and EE 4V98. Course grades in the 6 honors classes used to determine Honors status must be B- or higher to qualify.

Departmental Honors with Distinction may be awarded to students whose Senior Honors Thesis is judged by a faculty committee to be of exemplary quality. Only students graduating with Departmental Honors are eligible. Thesis/projects must be submitted by the deadline that applies to M.S. Theses in the graduating semester to allow for proper evaluation. Students interested in Honors with Distinction are encouraged to start working on their thesis/project a year prior to graduation.

Minors
The Department of Electrical Engineering does not offer minors at this time.

Interdisciplinary Programs
The Erik Jonsson School of Engineering and Computer Science offers Bachelor of Science programs in Computer Engineering and in Telecommunications Engineering. These programs are delivered by faculty from the Department of Computer Science and Electrical Engineering and are led by Program Heads, Drs. William Pervin for the Computer Engineering Program and Andrea Fumagalli for the Telecommunications Engineering Program.

Computer Engineering (B.S.C.E.)

Affiliated Faculty
Associate Professors: Dinesh K. Bhatia, Jorge Cobb, G. R. Dattatreya, Mehrdad Nourani, Ivor Page, Ravi Prakash, S. Venkatesan, Yuke Wang
Assistant Professors: Roozbeh Jafari, Issa Panahi, Rama Sangireddy
Senior Lecturers: Nathan Dodge

The Computer Engineering program is interdisciplinary. It was designed by the combined faculties of the Computer Science Department and the Electrical Engineering Department. Computer Engineering requires a blend of knowledge from the areas of hardware (Electrical Engineering) and software (Computer Science). The focus of the Computer Engineering degree is to provide excellent education in modern computer systems and prepare its graduates for outstanding careers in the rapidly changing and growing profession and for further continuing education.

The Computer Engineering program is based on a solid foundation of science and mathematics coursework. Students in this program are given an opportunity to learn to extend their abilities to analyze and solve complex problems and to design new uses of technology to serve today’s society. This program provides an integrated education experience directed toward the development of the ability to apply pertinent knowledge to the identification and solution of practical problems in computer engineering.

The Computer Engineering curriculum ensures that the design experience, which includes both analytical and experimental studies, is integrated throughout in a sequential development leading to advanced work. Design problems are frequently assigned in both lecture and laboratory courses. Each student is required to complete a major design project during the senior
year. In addition, established cooperative education programs with area industries may further supplement a student’s design experiences.

**Mission of the Computer Engineering (CE) Program**

The mission of the Computer Engineering Program is to provide education in the theory and practice of modern computer engineering. We will prepare our graduates to have rewarding and successful careers in a diverse range of computer engineering fields, including materials, devices, circuits, digital systems, signal/speech processing, and communications.

**CE Undergraduate Program Educational Objectives (PEOs)**

The focus of the Computer Engineering degree at U.T. Dallas is to provide excellent education in both computer science and electrical engineering. Our graduates shall be uniquely qualified to apply traditional engineering design and problem solving skills to modern computer systems comprising both hardware and software components.

**Additional PEOs:**

- Preparation for a successful, long-lived, engineering career
- Perform, review and assess sophisticated engineering design and manufacturing
- Further the necessities of innovation, functionality, safety, and economy in engineering
- Critical thinking, decision making and communicating
- Ability to contribute and to lead engineering teams

**High School Preparation**

Engineering education requires a strong high school preparation. Pre-engineering students should have high school preparation of at least one-half year in trigonometry and at least one year each in elementary algebra, intermediate and advanced algebra, plane geometry, chemistry, and physics, thus developing their competencies to the highest possible levels and preparing them to move immediately into demanding college courses in calculus, calculus-based physics, and chemistry for science majors. Pre-Computer Engineering students should have some experience with elementary programming in a high level language such as C, C++, or Java. It is also essential that pre-engineering students have the competence to read rapidly and with comprehension, and to write clearly and correctly.

**Lower-Division Study**

All lower-division students in Computer Engineering concentrate on mathematics, science, and introductory engineering courses, building competence in these cornerstone areas for future application in upper-division engineering courses. The following requirements apply both to students seeking to transfer to U.T. Dallas from other institutions as well as to those currently enrolled at U.T. Dallas, whether in another school or in the Erik Jonsson School of Engineering and Computer Science.

**ABET Requirements**

All engineering degree plans must satisfy the requirements specified by the Accreditation Board for Engineering and Technology (ABET). The course work must include at least:

1. One year (32 SCH) of an appropriate combination of mathematics and basic sciences;
2. One and one-half years (48 SCH) of engineering topics;
3. A general education component that complements the technical content.

Although the computer engineering curriculum that follows has been designed to meet these criteria, students have the responsibility, in consultation with an advisor, to monitor their own choice of courses carefully to be certain that all academic requirements for graduation are being satisfied.
Academic Progress in Computer Engineering

In order to make satisfactory academic progress as a Computer Engineering major, a student must meet all University requirements for academic progress, and must earn a grade of C- or better in each of the major core courses. No "Major Requirement" course (as listed under Section II of the B.S.C.E. degree requirement) may be taken until the student has obtained a grade of C- or better in each of the prerequisites (if a higher grade requirement is stated for a specific class, the higher requirement applies).

Bachelor of Science in Computer Engineering
Degree Requirements (126 hours)

I. Core Curriculum Requirements: 42 hours
   A. Communication (6 hours)
      3 hours Communication (RHET 1302)
      3 hours Professional and Technical Communication (ECS 3390)
   B. Social and Behavioral Sciences (15 hours)
      6 hours Government (GOVT 2301 and 2302)
      6 hours American History
      3 hours Social and Behavioral Science elective (ECS 3361)
   C. Humanities and Fine Arts (6 hours)
      3 hours Fine Arts (ARTS 1301)
      3 hours Humanities (HUMA 1301)
   D. Mathematics and Quantitative Reasoning (6 hours)
      6 hours Calculus (MATH 2417 and 2419)
   E. Science (9 hours)
      8 hours Physics (PHYS 2325, 2125, 2326 and 2126) or (PHYS 2421 and 2422)
      1 hour Science (CE/EE/TE 1102)

1 Curricular Requirements can be fulfilled by other approved courses from accredited institutions of higher education with the approval of an advisor. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

2 Six hours of Calculus are counted under the Mathematics Core (D) above, and two hours of Calculus are counted as Major Preparatory Courses.

II. Major Requirements: 75 hours
   Major Preparatory Courses (19 hours including 2 listed above in Core Curriculum)
   CE 1337 Computer Science I
   CE 2110 Introduction to Digital Systems Laboratory
   CE 2300 Linear Algebra for Engineers
   CE 2310 Introduction to Digital Systems
   CE 2336 Computer Science II
   MATH 2420 Differential Equations With Applications
   Major Core Courses (56 hours beyond Core Curriculum)
   CE 3101 Electrical Network Analysis Laboratory
   CE 3102 Signals and Systems Laboratory
   CE 3110 Electronic Devices Laboratory
   CE 3111 Electronic Circuits Laboratory
   CE 3120 Digital Circuits Laboratory
   CE 3300 Advanced Engineering Mathematics
   CE 3301 Electrical Network Analysis
   CE 3302 Signals and Systems
   CE 3307 Discrete Mathematics
   CE 3310 Electronic Devices
   CE 3311 Electronic Circuits
   CE 3320 Digital Circuits
   CE 3341 Probability Theory and Statistics
   CE 3346 Computer Algorithms and Data Structures
   CE 3354 Software Engineering
III. Elective Requirements: 9 hours

Advanced Electives (6 hours)

All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.

Free Electives (3 hours)

Both lower- and upper-division courses may count as free electives, but students must complete at least 51 hours of upper-division credit to qualify for graduation. Not all courses offered by the University can be used as a free elective. Please consult with your advisor.

Fast Track Baccalaureate/Master’s Degrees

In response to the need for advanced education in computer engineering, a Fast Track program is available to exceptionally well-qualified U.T. Dallas undergraduate students who meet the requirements for admission to the graduate school. The Fast Track program is designed to accelerate a student’s education so that both a B.S.C.E. and an M.S.C.E. degree can be earned in five years of full-time study. This is accomplished by (1) taking courses (typically electives) during one or more summer semesters, and (2) beginning graduate course work during the senior year. Details of the requirements for admission to this program are available from the Associate Dean’s office.

Honors Program

The Computer Engineering Program offers upper-division Honors for outstanding students in the B.S. Computer Engineering degree program. This program offers special sections of designated classes and other activities designed to enhance the educational experience of exceptional students. Admission to the Honors programs requires a 3.50 or better GPA in at least 30 hours of coursework. Graduation with Honors requires a 3.50 or better GPA and completion of at least 6 honors classes. These honors classes must include either Senior Honors in Computer Engineering (CE 4399) or Undergraduate Research in Computer Engineering (CE 4V98) and a Senior Honors Thesis must be completed within one of those two classes. (While the topics may be related, the Senior Thesis does not replace the need for the student to complete a regular Senior Design Project.) The other 5 honors classes can come from a mixture of Graduate level (up to a count of 4) classes and special honor sections of regular undergraduate CE classes (up to a count of 2). Current undergraduate honors courses include but are not limited to: CE 2310(H), CE 4334, CE 4372, CE 4399, and CE 4V98. Course grades in the 6 honor classes used to determine Honors status must be B- or higher to qualify.

Departmental Honors with Distinction may be awarded to students whose Senior Honors Thesis is judged by a faculty committee to be of exemplary quality. Only students graduating with Departmental Honors are eligible. Thesis/projects must be submitted by the deadline that applies to M.S. Theses in the graduating semester to allow for proper evaluation. Students interested in Honors with Distinction are encouraged to start working on their thesis/project a year prior to graduation.

Minors

The School of Engineering and Computer Science does not offer a minor in Computer Engineering at this time.
Telecommunications Engineering (B.S.T.E.)

Affiliated Faculty


Associate Professors: Jorge Cobb, Jason Jue, Latifur Khan, Aria Nosratinia, Balakrishnan Prabhakaran, Ravi Prakash, Mohammad Saqib, Murat Torlak, S. Venkatesan, Yuke Wang, Eric Wong

Assistant Professors: Neeraj Mittal, Kamil Sarac

Senior Lecturers: Charles Bernardin, William Boyd, Nathan Dodge, Muhammad Kalam, PK Rajasekaran, Marco Tacca

The Telecommunications Engineering program is interdisciplinary. Telecommunications Engineering requires a blend of knowledge from the areas of Electrical Engineering, Computer Science, and Economics/Policy. The focus of the Telecommunications Engineering degree is to provide excellent education in modern communications networks and systems and prepare the students for outstanding careers in telecommunications, data communications, network architecture, wireless, and optical networking.

The Electrical and Telecommunications Engineering programs are based on a solid foundation of science and mathematics coursework. Students in these programs are given an opportunity to learn to extend their abilities to analyze and solve complex problems and to design new uses of technology to serve today’s society. The engineering programs provide an integrated educational experience directed toward the development of the ability to apply pertinent knowledge to the identification and solution of practical problems in electrical and telecommunications engineering. These programs ensure that the design experience, which includes both analytical and experimental studies, is integrated throughout the curriculum in a sequential development leading to advanced work. Design problems are frequently assigned in both lecture and laboratory courses. Each student is required to complete a major design project during the senior year. In addition, established cooperative education programs with area industry further supplement design experiences.

Mission of the Telecommunications Engineering (TE) Program

The focus of the Telecommunications Engineering degree is to provide excellent education in modern communications networks and systems. Our graduates are trained in a variety of subfields of telecommunications engineering at the systems level. This prepares them for rewarding and successful careers in telecommunications, data communications, network architecture, wireless, optical networking and next generation networks.

TE Undergraduate Program Educational Objectives (PEOs)

The focus of the UTD’s Telecommunications Engineering degree is to provide excellent education in modern communications networks and systems. Our graduates shall be uniquely qualified to apply traditional engineering design and problem solving skills in modern telecommunications.

Additional Program Educational Objectives

- Preparation for a successful, long-lived, engineering career
- Perform, review and assess sophisticated engineering design and manufacturing
- Further the necessities of innovation, functionality, safety, and economy in engineering
- Critical thinking, decision making and communicating
- Ability to contribute and to lead engineering teams
- Place engineering design and decision making in a market and societal context.
- Growing and maintaining an outstanding faculty that remains motivated and empowers
- Excellent facilities, including teaching laboratories, computing facilities and classrooms with advanced presentation capabilities.


**High School Preparation**

Engineering education requires a strong high school preparation. Pre-engineering students should have high school preparation of at least one-half year in trigonometry and at least one year each in elementary algebra, intermediate and advanced algebra, plane geometry, chemistry, and physics, thus developing their competencies to the highest possible levels and preparing to move immediately into demanding college courses in calculus, calculus-based physics, and chemistry for science majors. It is also essential that pre-engineering students have the competence to read rapidly and with comprehension, and to write clearly and correctly.

**Lower-Division Study**

All lower-division students in either Electrical Engineering or Telecommunications Engineering concentrate on mathematics, science and introductory engineering courses, building competence in these cornerstone areas for future application in upper-division engineering courses. The following requirements apply both to students seeking to transfer to U.T. Dallas from other institutions as well as to those currently enrolled at U.T. Dallas, whether in another school or in the Erik Jonsson School of Engineering and Computer Science.

**ABET Requirements**

All engineering degree plans must satisfy the requirements specified by the Accreditation Board for Engineering and Technology (ABET). The course work must include at least:

1. One year (32 SCH) of an appropriate combination of mathematics and basic sciences,
2. One and one-half years (48 SCH) of engineering topics.
3. A general education component that complements the technical content.

Although the electrical engineering and telecommunications engineering curricula that follow have been designed to meet these criteria, students have the responsibility, in consultation with an advisor, to monitor their own choice of courses carefully to be certain that all academic requirements for graduation are being satisfied. Students are strongly encouraged to take courses in such subjects as accounting, industrial management, finance, personnel administration, and engineering economy.

**Academic Progress in Telecommunications Engineering**

In order to make satisfactory academic progress as a Telecommunications Engineering major, a student must meet all University requirements for academic progress, and must earn a grade of C- or better in each of the major core courses. No "Major Requirement" course (as listed under Section II of the B.S.T.E. degree requirement) may be taken until the student has obtained a grade of C- or better in each of the prerequisites (if a higher grade requirement is stated for a specific class, the higher requirement applies).

**Bachelor of Science in Telecommunications Engineering**

**Degree Requirements (125 hours)**

I. **Core Curriculum Requirements**: 42 hours

A. Communication (6 hours)
   - 3 hours Communication (RHET 1302)
   - 3 hours Professional and Technical Communication (ECS 3390)
B. Social and Behavioral Sciences (15 hours)
   - 6 hours Government (GOVT 2301 and 2302)
   - 6 hours American History
   - 3 hours Social and Behavioral Science elective (ECS 3361)
C. Humanities and Fine Arts (6 hours)
   - 3 hours Fine Arts (ARTS 1301)
   - 3 hours Humanities (HUMA 1301)
D. Mathematics and Quantitative Reasoning (6 hours)
   - 6 hours Calculus (MATH 2417 and 2419)
E. Science (9 hours)
   8 hours Physics (PHYS 2325, 2125, 2326 and 2126)\(^1\)
   4 hours Chemistry (CHEM 1311 and 1111) \(^1\)

\(^1\) Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: 71 hours\(^2\)

Major Preparatory Courses (16 hours beyond Core Curriculum)

CHEM 1111 General Chemistry Laboratory \(^3\)
CHEM 1311 General Chemistry \(^3\)
CS 1337 Computer Science I
CS 2336 Computer Science II
EE 1102 Introduction to Experimental Techniques
MATH 2417 Calculus I\(^2\)
MATH 2419 Calculus II\(^2\)
MATH 2420 Differential Equations With Applications
PHYS 2125 Physics Laboratory I\(^3\)
PHYS 2126 Physics Laboratory II\(^3\)
PHYS 2325 Mechanics \(^3\)
PHYS 2326 Electromagnetism and Waves\(^3\)

Major Core Courses (55 hours beyond Core Curriculum)

CS 3340 Computer Architecture
CS 4141 Digital Systems Laboratory
CS 4341 Digital Logic and Computer Design
ECS 3361 Social Issues and Ethics in Computer Science and Engineering \(^5\)
ECS 3390 Professional and Technical Communication\(^5\)
EE 3150 Communications Systems Laboratory
EE 3300 Advanced Engineering Mathematics
EE 3350 Communications Systems
EE 4360 Digital Communications
EE 4361 Introduction to Digital Signal Processing
TE 3101 Electrical Network Analysis Laboratory
TE 3102 Signals and Systems Laboratory
TE 3301 Electrical Network Analysis
TE 3302 Signals and Systems
TE 3307 Discrete Mathematics
TE 3341 Probability Theory and Statistics
TE 3346 Computer Algorithms and Data Structures
TE 4348 Operating Systems Concepts
TE 4365 Introduction to Wireless Communication
TE 4367 Telecommunication Networks
TE 4388 Senior Design Project I
TE 4389 Senior Design Project II
TE 4390 Computer Networks

\(^2\) Six hours of Calculus are counted under Mathematics Core above, and two hours of Calculus are counted as Major Preparatory Courses.

\(^3\) Nine hours of science are counted under Science Core. Three hours are counted under Major Preparatory Courses.

\(^4\) Students must have passed each of the CS, Math, Science, EE and TE courses listed above, and each of their prerequisites, with a grade of C- or better.

\(^5\) Hours fulfill the communication component requirement of the Core Curriculum

\(^6\) Hours contribute to the Social and Behavioral Sciences component of the Core Curriculum

III. Elective Requirements: 12 hours

Advanced Electives (6 hours)

All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.
Free Electives (6 hours)
Both lower-and upper division courses may count as free electives, but students must complete at least 51 hours of upper-division credit to qualify for graduation. Not all courses offered by the University can be used as a free elective. Please consult with your advisor.

Fast Track Baccalaureate/Master’s Degrees
In response to the need for advanced education in electrical engineering, a Fast Track program is available to exceptionally well-qualified U.T. Dallas undergraduate students who meet the requirements for admission to the graduate school. The Fast Track program is designed to accelerate a student’s education so that both a B.S.E.E. and an M.S.E.E. degree can be earned in five years of full-time study. This is accomplished by (1) taking courses (typically electives) during one or more summer semesters, and (2) beginning graduate course work during the senior year. Details of the requirements for admission to this program are available from the Associate Dean’s Office.

Honors Program
The Telecommunications Engineering Program offers upper-division Honors for outstanding students in the B.S. Telecommunications Engineering degree program. This program offers special sections of designated classes and other activities designed to enhance the educational experience of exceptional students. Admission to the Honors programs requires a 3.50 GPA in at least 30 hours of coursework. Graduation with Honors requires a 3.50 or better GPA and completion of at least 6 honors classes. These honors classes must include either Senior Honors (TE 4399) or Undergraduate Research in Telecommunications Engineering (TE 4V98) and a Senior Honors Thesis must be completed within one of those two classes. (While the topics may be related, the Senior Thesis does not replace the need for the student to complete a regular Senior Design Project.) The other 5 honors classes can come from a mixture of Graduate level (up to a count of 4) classes and special honor sections of regular undergraduate TE classes (up to a count of 2). Current undergraduate honors courses include but are not limited to: TE 2310(H), TE 3350(H), TE 4399 and TE 4V98. Course grades in the 6 honor classes used to determine Honors status must be B- or higher to qualify.

Departmental Honors with Distinction may be awarded to students whose Senior Honors Thesis is judged by a faculty committee to be of exemplary quality. Only students graduating with Departmental Honors are eligible. Thesis/projects must be submitted by the deadline that applies to M.S. Theses in the graduating semester to allow for proper evaluation. Students interested in Honors with Distinction are encouraged to start working on their thesis/project a year prior to graduation.

Minors
The School of Engineering and Computer Science does not offer minors in Telecommunications Engineering at this time.
School of General Studies

The School of General Studies provides an interdisciplinary environment that allows students to understand and integrate the liberal arts and sciences. The school administers interdisciplinary degree programs that afford students the opportunity to design their degree plans on an individualized basis. To assist the student in pursuing a course of study leading to successful completion of an undergraduate degree, the school provides a unique support structure. Included in this structure is the school’s Internship Program that arranges professional work experience in diverse career settings. The educational environment of General Studies is especially congenial to students eager to pursue unconventional or innovative combinations of course work.

Faculty

All faculty in the university are eligible to participate.

Professors: George W. Fair, Karen J. Prager, Lawrence J. Redlinger
Associate Professor: Erin A. Smith
Senior Lecturers: Candice T. Chandler, Susan P. Chizeck, Dachang Cong, Patricia A. Leek, Angela McNulty, Elizabeth M. Salter, Nancy C. Van, Tonya Wissinger
Associate Dean for Teacher Development: Scherry F. Johnson

Programs

The School of General Studies administers the programs for the Bachelor of Arts in American Studies, the Bachelor of Arts in Gender Studies, the Bachelor of Arts in Interdisciplinary Studies, and the Bachelor of Science in Interdisciplinary Studies. The program in American Studies is designed for students who wish to learn more about United States’ institutions, arts, and society, both in the past and present. The Bachelor of Arts in Gender Studies is designed to examine the ways that gender, as a set of ideas, fundamentally shapes our institutions, history and culture. The Bachelor of Arts and the Bachelor of Science in Interdisciplinary Studies Programs emphasize a broad learning experience and a wider perspective than that provided by traditional undergraduate majors. All programs are designed for students who wish to choose among conventional disciplines, both to explore a variety of topics and to integrate courses focusing on a particular area of interest. They are also appropriate for those students who seek a thorough grounding in the traditional arts and sciences from an interdisciplinary perspective. For students in other schools who wish to broaden their education by including a School of General Studies program, the double degree is recommended. This option calls for a minimum of 30 semester credit hours at the upper division beyond those necessary for the major with the larger credit hour requirement. In addition, the student must satisfy all requirements for both majors. The School of General Studies encourages double majors in both American Studies and Gender Studies, but a double major is not an option in Interdisciplinary Studies. Students seeking to double major in American Studies or Gender Studies must consult with the Associate Dean for Undergraduate Education in the School of General Studies.

Internship Program

All undergraduates in the School of General Studies are encouraged to take an internship with an organization in the community. Internships provide students with the opportunity to apply the knowledge and skills that they have mastered in their academic work. Students applying for internships must be in their junior or senior year and in good academic standing, have completed the appropriate course work, and receive approval of the Internship Director. Students normally enroll for 3 to 6 semester hours. Students interested in the program should see the Internship Director of the School of General Studies or call 972/883-2354.

Honors in the Major

The School of General Studies offers Honors Programs, which vary, by major, and provide an intellectually challenging opportunity for the brightest and best students in the School of General Studies.

Junior and Senior students with a cumulative UTD GPA of 3.75 are eligible to apply for the honors programs which consist of a 30 hour defined curriculum, including an honors upper level writing course, and an internship component. Due to our high GPA entrance requirements, an honors thesis is not required for honors in the major. For Honors with distinction, however, an honors thesis is required. This thesis must be submitted at least one week before the end of classes, and must be nominated by the supervising professor as being of exceptional quality. The faculty of the school (or a subgroup thereof) will then determine if the
thesis warrants this level of distinction. Students must apply for Departmental Honors through their academic advisor at the time they apply for graduation. For applications and more details, please consult your General Studies academic advisor.

**Minors**

The School of General Studies offers minors in American Studies and in Gender Studies. Students in the B.A. in American Studies and the B.A. in Gender Studies programs are encouraged to pursue a minor as part of their degree plan. Students in the IS degree programs cannot have a minor. Nor is there a minor offered in Interdisciplinary Studies. The requirements for each minor are listed below the degree requirements.

**American Studies (B.A.)**

The program in American Studies has as its focus the institutions, arts, structure, and social processes of the United States. It emphasizes interdisciplinary work which integrates disciplinary perspectives. Students choose two broad areas within which to work.

American Studies graduates work in business, non-profit organizations, media and culture industries. The B.A. in American Studies is also an excellent preparation for law school or graduate school. Each student designs his or her own program within specific guidelines and in consultation with a faculty advisor. The courses a student takes as part of the American Studies program may be given in any school within the university but will include American Studies courses and appropriate Interdisciplinary Studies courses. A list of courses which apply to the American Studies degree may be obtained from the academic advisors in the School of General Studies. Double majors including American Studies are encouraged.

**Bachelor of Arts in American Studies Degree Requirements (120 hours)**

I. **Core Curriculum Requirements**: 42 hours

   A. Communication (6 hours)
      - 3 hours Communication (RHET 1302)
      - 3 hours Communication Elective (BIS 3320)

   B. Social and Behavioral Sciences (15 hours)
      - 6 hours Government (GOVT 2301 and 2302)
      - 6 hours History (HIST 1301 and 2301)
      - 3 hours Social and Behavioral Sciences Elective

   C. Humanities and Fine Arts (6 hours)
      - 3 hours Fine Arts (ARTS 1301)
      - 3 hours Humanities (AMS 2341)

   D. Mathematics and Quantitative Reasoning (6 hours)
      - 3 hours College Algebra (MATH 1306 or MATH 1314)
      - 3 hours Statistics (STAT 1342 or PSY 2317)

   E. Science (9 hours including at least one course with a substantial laboratory component)

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. **Major Requirements**: 54 hours (42 hours beyond the Core Curriculum)

   Major Preparatory Courses (6 hours)
   One of the following:
      - MATH 1306 College Algebra for the Non-Scientist
      - MATH 1314 College Algebra
      - MATH 1325 Applied Calculus I
      - MATH 2417 Calculus I
   One of the following:
      - PSY 2317 Statistics for Psychology
      - or STAT 1342 Statistical Decision Making

   Major Core Courses (12 hours)
      - AMS 3302 American Cultures
School of General Studies

or AMS 2341 American Studies for the Twenty-First Century \textsuperscript{2} (at the lower division)
BIS 3320 The Nature of Intellectual Inquiry\textsuperscript{2}
Two of the following courses:
HIST 3369 United States Foreign Relations
PSCI 3325 American Public Policy
PSCI 3327 American Foreign Policy

Major Related Courses (36 hours)
In addition to the core requirements, students will take 18 semester credit hours of course work in each of two of the following disciplinary options, for a total of 36 hours:
The American Body Politic
Americans Past and Present
America and the World Community
American Business and Technology
American Literature and the Arts
Popular Culture

\textsuperscript{2} A required Major course that also fulfills a Core Curriculum requirement. An additional IS course will be taken if BIS 3320 is used to satisfy the Core Curriculum Communication Elective requirement.

III. Elective Requirements: 36 hours
Advanced Electives (6 hours)
Free Electives (30 hours)
Students must complete 51 hours of upper-division course work to graduate.

Honors in American Studies
GPA: 3.75 cumulative GPA, 3.75 GPA in courses described below, and a total of 27 or 30 upper level UTD hours as described below. (The variation is determined by whether or not AMS 3302 or AMS 2341 is chosen). The total hours must be 30.

Required courses:
AMS 3302 American Cultures or AMS 2341 American Studies for Twenty-First Century (3 hours)
BIS 3320 The Nature of Intellectual Inquiry Honors Section (3 hours)
Two of HIST 3369, PSCI 3325 or PSCI 3327 (6 hours)
Core Course of first chosen option area (3 hours)
Core Course of second chosen option area (3 hours)
One approved AMS course from option area 1 (3 hours)
One approved course from option area 2 (3 hours)
Options: (6 hours)
6 hours of Internship
3 hours of Internship and one approved three hour course from option area 1 or 2

Notation on Transcript: Honors in Major

Minor in American Studies
The American Studies minor is 18 semester hours. AMS 3302 and BIS 3320 are required in addition to four other approved American Studies courses chosen from AMS 3300, AMS 3370, AMS 3374, AMS 3384, AMS 4378, AMS 4379, and ISGS 3338.

Students pursuing a degree in American Studies are encouraged to incorporate a minor from another discipline in their degree program.

Gender Studies (B.A.)
The Bachelor of Arts in Gender Studies is an interdisciplinary degree that draws upon courses in Gender Studies, American Studies, Arts and Humanities, Social Sciences, Psychology, and other gender-related courses. The program is designed to examine the ways that gender as a complex social construction intersects with class, race, age, ethnicity, nationality, sexual orientation,
and sexual identity; to examine the lives and experiences of groups which have been underrepresented in traditional academic work; and to acquaint students with the fundamental methodologies of women’s and gender studies. Gender Studies graduates work in fields such as human resources, management, social service, and sales. The B.A. in Gender Studies also prepares students to pursue professional degrees in education, law, health sciences, social work, policy studies, and management or graduate degrees in the humanities and social sciences. Each student in the Gender Studies program is actively involved in the formulation of his or her program of study, working with a faculty advisor to devise an individualized degree plan. Students pursuing a degree in Gender Studies may incorporate a minor from another discipline in their degree program. Students are encouraged to double major in Gender Studies and another discipline.

Bachelor of Arts in Gender Studies Degree Requirements (120 hours)

I. Core Curriculum Requirements: 42 hours

A. Communication (6 hours)
3 hours Communication (RHET 1302)
3 hours Communication (BIS 3320)

B. Social and Behavioral Sciences (15 hours)
6 hours American Government (GOVT 2301 and GOVT 2302)
6 hours History (HIST 1301 and HIST 2301)
3 hours Social and Behavioral Science Elective

C. Humanities and Fine Arts (6 hours)
3 hours Humanities (AMS 2341 or HUMA 1301)
3 hours Fine Arts (ARTS 1301)

D. Mathematics and Quantitative Methods (6 hours)
3 hours College Algebra (MATH 1306 or MATH 1314) 1
3 hours Quantitative Methods or Math (STAT 1342 or PSY 2317) 1

E. Science (9 hours)
One course must have a lab component
See your academic advisor for appropriate courses

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: 48-49 hours (36-37 hours beyond the Core Curriculum)

Major Preparatory Courses (9 hours)
MATH 1306 College Algebra for the Non-Scientist 2
or MATH 1314 College Algebra 2
STAT 1342 Statistical Decision Making 2
or PSY 2317 Statistics for Psychology 2
GST 2300 Introduction to Gender Studies 2

Major Courses (36 hours)
A. Gender Studies Core Courses (9 hours)
GST 3301 Psychology of Gender
GST 3302 Gender in Western Thought
GST 3303 Gender, Society and Politics

B. Disciplinary Methods (3-4 hours)
One of the following:
AP 3300 Elements of Art and Performance
HIST 3301 Historical Inquiry
LIT 2341 Literary Analysis
SOC 3304 Research Methods in Sociology

C. Gender Studies Major and Related Courses (27 hours)
See academic advisor. Must include BIS 3320 The Nature of Intellectual Inquiry 2

2 A required Major course that also fulfills a Core Curriculum requirement. An additional IS course will be taken if BIS 3320 is used to satisfy the Core Curriculum Communication Elective requirement.
III. Elective Requirements: (41-42 hours)
   Advanced Electives (6 hours)
   Free Electives (35-36 hours)
   Students must complete 51 hours of upper-division credit to graduate.

Honors in Gender Studies

GPA: 3.75 cumulative GPA, 3.75 GPA in courses described below, and a total of 27 upper level UTD hours and GST 2300.

Required courses:
   BIS 3320 The Nature of Intellectual Inquiry Honors Section (3 hours)
   GST 2300 Introduction to Gender Studies (3 hours)
   GST 3301 Psychology of Gender (3 hours)
   GST 3302 Gender in Western Thought (3 hours)
   GST 3303 Gender, Society, and Politics (3 hours)
   Other approved upper level courses in the Gender Studies (9 hours)
   Options: (6 hours)
      6 hours of Internship
      3 hours of Internship and one three hour upper level approved course from in the Gender Studies curriculum

Notation on Transcript: Honors in Major

Minor in Gender Studies

The Gender Studies minor is 18 semester hours. The courses consist of GST 2300/SOC 2300, two courses chosen from GST 3301/PSY 3324, GST 3302/HIST 4380 (when the topic is Gender in Western Thought), and GST 3303/PSCI 3354/SOC 3354, and nine hours chosen from: AHST 4342 (when the topic is Venus to Vampire), AMS 3300, AMS 3318, BIS 4V04, CRIM 3324, GST 4311, GST 4380/SOC 4380, HIST 3324, HIST 3366, HIST 3371, HIST 3384, HIST 4360, ISGS 3306, ISGS 3312/LIT 3327, LIT 3380, PSCI 3353/SOC 3353, PSCI 4358/SOC 4355, PSY 3338, PSY 4345, PSY 4346, SOC 3343, SOC 3352, SOC 3353/PSCI 3353, SOC 4355/PSCI 4358, SOC 4375, or SOC 4380/GST 4380.

Interdisciplinary Studies (B.A. and B.S.)

The Bachelors' degrees in Interdisciplinary Studies emphasize a broad learning experience and a wider perspective than that provided by traditional undergraduate majors. They are designed to offer the student the opportunity to participate in an interdisciplinary, coherent, academically sound, and goal-oriented education directly relevant to the student's intellectual development and career aspirations. They are appropriate for those students who seek a thorough grounding in the traditional arts and sciences from an interdisciplinary perspective. Each student in the Interdisciplinary Studies program becomes an active partner in the formulation of his or her program of study, working in consultation with an academic advisor to devise an appropriate individual degree plan. Within the framework of two foundation areas, a university-wide Interdisciplinary Studies sequence, and a multidisciplinary concentration, a student may draw upon the resources of all schools of the university to create a degree program.

Common areas of concentration for the B.A.I.S. are Business Issues, Communications, Environmental Studies, Human Resources, International Relations, Law, Public Relations, Urban Studies and courses toward Teacher Certification (EC-4 and 4-8). Graduates have been accepted into graduate programs in Divinity, Environmental Studies, the health professions, Humanities, Interdisciplinary Studies, Law, Management, and Social Sciences. The B.S. in Interdisciplinary Studies is selected by students interested in Environmental Studies, the health professions, and other science-related fields. Students interested in pre-health are advised to contact the HPAC (Health Professions Advisory Committee) Office during their first semester.

Minors and Double Majors are not allowed in these two Interdisciplinary Studies degrees. In order to make the Interdisciplinary Studies degrees reflect their name, no more than 21 hours of courses with the same prefix are allowed in the combined major requirements and the 6 hours of advanced electives. (BA and ACCT courses count as a single prefix.) In the major requirements and 6 hours of advanced electives, there must be a minimum of 51 hours of upper-division courses. In the concentration, a minimum of three (3) prefixes must be represented. Please consult an academic advisor for further elaboration.
Bachelor of Arts in Interdisciplinary Studies Degree Requirements (120 hours)

I. Core Curriculum Requirements: 42 hours
   A. Communication (6 hours)
      3 hours Communication (RHET 1302)
      3 hours Communication Elective (BIS 3320) 1
   B. Social and Behavioral Sciences (15 hours)
      6 hours Government (GOVT 2301 and 2302)
      6 hours American History
      3 hours Social and Behavioral Sciences Elective
   C. Humanities and Fine Arts (6 hours)
      3 hours Fine Arts (ARTS 1301)
      3 hours Humanities (HUMA 1301)
   D. Mathematics and Quantitative Reasoning (6 hours)
      3 hours College Algebra (MATH 1306 or MATH 1314) 1
      3 hours Statistics (STAT 1342 or PSY 2317) 1
   E. Science (9 hours including at least one course with a substantial laboratory component)

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: 60 hours (51 hours beyond the Core Curriculum)
   Major Preparatory Courses (6 hours)
      MATH 1306 College Algebra for the Non-Scientist 2
         or MATH 1314 College Algebra 2
      STAT 1342 Statistical Decision Making 2
         or PSY 2317 Statistics for Psychology 2
   Major Core Courses (12 hours)
      One 3 hour ISGS course
      One 3 hour IS course offered by another school (ISAH, ISEC, ISHD, ISNS, or ISSS)
      One 3 hour course chosen from AMS, GST or ISGS
      BIS 3320 The Nature of Intellectual Inquiry 2
   Major Related Courses (42 hours) consisting of:
      Two Foundations: 12 hours each (24 credit hours)
         The two foundations are drawn from the Schools of Arts and Humanities, Behavior and Brain Sciences, Economic, Political and Policy Sciences, Computer Science, General Studies, Management, and Natural Sciences and Mathematics
      One Concentration: 18 hours
         Each student devises, in consultation with his/her advisor, the topic for the Concentration and selects 18 semester credit hours of course work related to the topic, drawn from at least three academic disciplines.
         Appropriate IS course work may be selected.

2 A required Major course that also fulfills a Core Curriculum requirement. An additional IS course will be taken if BIS 3320 is used to satisfy the Core Curriculum Communication Elective requirement.

III. Elective Requirements: 27 hours
   Advanced Electives (6 hours)
   Free Electives (21 hours) 2
      Students must complete 51 hours of upper-division course work to graduate.

3 An additional (or fourth) IS course (science or non-science) will be taken if BIS 3320 is used to satisfy the Core Curriculum Communication Elective requirement.

Honors in Interdisciplinary Studies (BA)
GPA: 3.75 cumulative GPA, 3.75 GPA in courses described below, and a total of 30 upper level UTD hours as described below.
School of General Studies

Required courses:
- BIS 3320 The Nature of Intellectual Inquiry Honors Section (3 hours)
- Foundation 1 (3 hours)
- Foundation 2 (3 hours)
- Concentration (15 hours)

Options: (6 hours)
- 6 hours of Practice Teaching
- 6 hours of Internship
- 3 hours of Internship and one three hour ISGS/AMS/GST course

Notation on Transcript: Honors in Major

Bachelor of Science in Interdisciplinary Studies Degree Requirements (120 hours)

I. Core Curriculum Requirements1: 42 hours
   A. Communication (6 hours)
      3 hours Communication (RHET 1302)
      3 hours Communication Elective (BIS 3320) 1
   B. Social and Behavioral Sciences (15 hours)
      6 hours Government (GOVT 2301 and 2302)
      6 hours American History
      3 hours Social and Behavioral Sciences Elective
   C. Humanities and Fine Arts (6 hours)
      3 hours Fine Arts (ARTS 1301)
      3 hours Humanities (HUMA 1301)
   D. Mathematics and Quantitative Reasoning (6 hours)
      6 hours Calculus (MATH 1325 and 1326 or MATH 2417 and 2419) 1
   E. Science (9 hours including at least one course with a substantial laboratory component)

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: 60 hours (51 hours beyond the Core Curriculum)
   Major Preparatory Courses (6-8 hours)
   Either MATH 1325 Applied Calculus I2
   and MATH 1326 Applied Calculus II2
   or MATH 2417 Calculus I2
   and MATH 2419 Calculus II2
   Major Core Courses (12 hours)
   Three Science IS courses
   BIS 3320 The Nature of Intellectual Inquiry3
   Major Related Courses (42 hours) consisting of:
   Two Foundations: 12 hours each (24 student credit hours)
   Foundation I consists of courses taught by the School of Natural Sciences and Mathematics, Computer Science, or Science courses from the School of Behavior and Brain Sciences.
   Foundation II is drawn from Arts and Humanities, Behavior and Brain Sciences (if not used for Foundation I), Computer Science (if not used in Foundation I), Economical, Political and Policy Sciences, General Studies, and Management.
   One Concentration: 18 hours
   Each student devises, in consultation with his/her advisor, the topic for the Concentration and selects 18 semester credit hours of course work related to the topic, drawn from at least three academic disciplines. Appropriate IS course work may be selected. Three courses must be science courses and one must be a statistics course.

2 A required Major course that also fulfills a Core Curriculum requirement. An additional IS course will be taken if BIS 3320 is used to satisfy the Core Curriculum Communication Elective requirement.
III. **Elective Requirements:** 27 hours
   - Advanced Electives (6 hours)
   - Free Electives (21 hours) \(^2\)
     - Students must complete 51 hours of upper-division course work to graduate.

\(^3\) Students may elect to substitute MATH 2417 and 2419 for MATH 1325 and MATH 1326 and count two of the credit hours as Free Electives.

**Honors in Interdisciplinary Studies (BS)**

**GPA:** 3.75 cumulative GPA, 3.75 GPA in courses described below, and a total of 30 upper level UTD hours as described below.

**Required courses:**
   - BIS 3320 The Nature of Intellectual Inquiry Honors Section (3 hours)
   - Foundation I – Natural Science and Mathematics (6 hours)
   - Concentration (15 hours)
   - Options: (6 hours)
     - 6 hours of Practice Teaching
     - 6 hours of Internship
     - 3 hours of Internship and one three hour ISGS/AMS/GST course

**Notation on Transcript:** Honors in Major

**Highly Recommended**

Internships, basic computer skills, foreign languages, international studies, and courses in literature and history, offered by the School of General Studies are highly recommended in all General Studies degree plans. Students should consult closely with their advisors on particular areas of interest they wish to include in their programs.
School of Management

The School of Management’s mission is to meet the challenges of a rapidly changing, technology-driven, global society by partnering with the business community to:

- Conduct research enhancing management knowledge;
- Deliver high quality management education to a diverse group of undergraduate and graduate students and practicing executives;
- Develop, innovate and continuously improve programs advancing management education and practice.

The School of Management is committed to providing our students an outstanding educational experience that will expand and sharpen their skills, help them become leaders of business and leave them with strong career prospects. Focusing on the rapidly changing challenges of our technology-driven global society, many of the School’s programs have been instituted in response to requests from business and designed to meet the needs of tomorrow’s industry. Our programs stress innovations in the latest technologies while providing a foundation in the basics of business management.

The Bachelor of Science degree in Business Administration is designed to provide students with a broad preparation for a business career and to lay the foundation for further study in business administration. Strong emphasis is placed on problem solving techniques that are typical of the modern business organization. Students are prepared to apply their skills and knowledge toward solving the complex problems that face business and industry in today's society. The Bachelor of Science in Business Administration offers concentrations in Management Information Systems, Entrepreneurship, International Business, Marketing, and Operations Management in addition to the general degree. A double major in Biology is offered in conjunction with the Biology Department.

The program leading to the degree of Bachelor of Science in Accounting and Information Management provides students a broad-based education that balances conceptual with pragmatic knowledge and exposes accounting students to other related areas. The objective of the Program is to develop professionals who understand the role of information in organizations and financial markets; have the necessary skills to integrate financial analysis and information technology; and possess analytical and management functional area skills. Completion of this program will enable students to seek careers in information-intensive organizations as information managers, consultants or financial analysts. Students who desire a comprehensive accounting education and are seeking to become Certified Public Accountants are advised to pursue the 150 credit-hour, B.S. and M.S. Fast-Track Program in Accounting and Information Management. Students who successfully complete both degrees may choose to sit for the CPA examination upon completion of the 150 semester hour educational requirement of the Texas State Board of Public Accountancy.

The Bachelor of Science degree in Finance provides students with both practical and theoretical training in financial decision making. Students who choose this degree will have the opportunity to develop the quantitative skills required to rigorously analyze financial information, the analytical foundation needed for making corporate financial decisions, and the problem solving skills necessary for prudent investment management. Completion of the degree requirements will permit students to seek careers as financial analysts, as well as careers with corporations, financial institutions and government agencies. With the appropriate choice of courses, a student should be able to successfully complete the Certified Financial Planning (CFP®) program. A double major is also offered in conjunction with the Economics program to students interested in pursuing the Chartered Financial Analyst (CFA®) designation. The CFA® program, administered by the CFA® Institute, is a globally recognized standard for measuring the competence and integrity of financial analysts. Like the Bachelor of Science degree in Finance, the double major prepares students for the CFA® Level I examination. However, the double major provides students with more analytical preparation for the Level II and III examinations, which typically require graduate course work as well.

All degrees contain a central core of 30 hours. In the core courses, students have an opportunity to learn theories and analytical techniques that can be applied to the functional areas of business, such as finance and marketing. They are exposed to the international dimensions of business activities and to social and political factors that impinge on business behavior. A capstone course in strategic management provides an integrative experience where students are challenged to solve real world business problems. Fifty percent of the total business credit hours must be taken at U.T. Dallas.

Students are also required to take courses outside the School of Management in order to broaden their educational experience in preparation for leadership roles as professionals and/or managers in the modern business organization.
Faculty


**Associate Professors:** Mark Anderson, Indranil Bardhan, Metin Cakanyildirim, Milind Dawande, David Deeds, J. Richard Harrison, Surya Janakiraman, Robert Kieschnick, Nanda Kumar, Zhiang (John) Lin, Livia Markoczy, Syam Menon, B.P.S. Murthi, Ramachandran Natarajan, Ashutosh Prasad, Orlando Richard, Young Ryu, Jane Salk, David Springate, Eric Tseng, Yunzeng Wang, Yexiao Xu

**Assistant Professors:** Jayatirtha Asundi, Nina Baranchuk, Norris Bruce, Alex Butler, Octavian Carare, Zhongdan Dai, Kutsal Dogan, Laurel Franzen, Rakesh Gupta, umit Guran, Ernan Haruvy, Seung-Hyun Lee, Xu Li, Xiaohi Liu, Holly Luize, Stan Markov, Volkan Muslu, Valery Polkovnichenko, Hyeun-Suk Rhe, Andrei Strijnev, Mark Vargus, Yu Wang, Kelsey Wei, Yuanping Ying, Wei Yue, Alejandro Zentner, Jun Zhang, Qin Zhang, Eric Zheng, Yibin Zhou

**Visiting Professors:** Huseyin Cavusoglu, Usman Ghan, Xiuli He

**Professor Emeritus:** Dale Osborne

**Clinical Faculty:** Tevfik Dalgic, Charlie Hazzard, Peter Lewin, John McCracken, Michael Oliff, Divakar Rajamani, Fang Wu

**Senior Lecturers:** Joachim Adler, Art Agulnek, Frank Anderson, Jasper Arnold, John Barden, George Barnes, Abhijit Biswas, Ron Blair, Tiffany Bortz, Mary Chaffin, Anne Ferrante, Richard Fisher, Mary Beth Goodrich, Rob Hicks, Jonathon Hochberg, Marilyn Kaplan, Chris Linsteadt, Diane S. McNulty, Radha Mookerjee, Kumar Nair, Joseph Picken, Nataliya Polkovnichenko, Matt Polze, Carolyn Reichert, Robert Robb, Tracey Rockett, Mark Salamasick, Michael Savoie, Avanti Sethi, Charles Solcher, Lou Thompson, Amy Troutman, Habte Woldu, Laurie Ziegler

Management Honors Program

The Management Honors Program provides an intellectually challenging and stimulating academic experience in a unique learning environment for the best and brightest students. Sophomores, juniors and seniors with a 3.50 grade point average are eligible to apply for the program. Freshmen are considered for membership based on high school class rank and SAT/ACT scores. To graduate with Management Honors students must have a 3.50 GPA based on at least 30 graded hours at UTD, complete an honors curriculum which includes a thesis, and complete a community service requirement. Management Honors with Distinction will be awarded to students whose thesis is judged by the faculty to be of exemplary quality. Applications and detailed information are available in the School of Management Advising Office.

Professional Program in Accounting

The Professional Program in Accounting (PPA) is designed for students who wish to pursue a career in professional accounting. This program is a two-and-a-half year program, beginning in the spring semester of the student’s junior year. Qualified students will earn their Bachelor of Science in Accounting and Information Management (BS-AIM) degree once all degree requirements for the bachelor’s degree have been satisfied, additionally, the Master of Science in Accounting and Information Management (MS-AIM) degree will be awarded upon successful completion of requirements for that degree. The goals of the program are to place PPA students in professional accounting internships and full-time positions, increase networking opportunities among students with professionals, and prepare students to become Certified Public Accountants. Applications to the program are accepted in the fall semester of a student’s junior year. Applications and detailed information are available in the School of Management Advising Office.

Fast Track Baccalaureate/Master’s Degrees

Fast Track programs are designed to permit undergraduate students enrolled at U.T. Dallas to begin work on the MBA or M.S. degrees before graduation. Qualified seniors may take graduate courses in Management that will apply toward the Bachelor of Science degree and also satisfy requirements for the Master’s degree. These courses will be selected from a list determined by the School.

Fast Track courses taken during the undergraduate senior year must be well chosen so that they satisfy the requirements of the B.S. degree AND those of the intended MBA/M.S. degree. Students in one major may choose to Fast Track into another major.
Students can take the Fast Track courses as substitutes for major related courses, as guided and/or free electives. Students from other Schools at UTD can Fast Track into SOM degrees as long as they meet the Fast Track admission requirements. Students must earn a grade of at least B in Fast Track courses – otherwise the courses only count toward the undergraduate degree.

Admission to a Fast Track program does not guarantee admission to the graduate program. Students are required to meet admission requirements of the MBA and M.S. programs, including the GMAT. Students may delay for up to one year entering the graduate program and have their Fast Track courses count toward their graduate degree. Students can also take graduate courses to use only for undergraduate or graduate credit. Students must submit an acceptable GMAT score and receive permission from the Associate Dean before taking more than 12 graduate hours for any use. Details of the programs are available from the School of Management Advising Office.

**Fast Track Options in the School of Management**

**Fast Track B.S. /MBA:** The MBA program is a 53 hour program. Qualified seniors may take up to 12 hours of graduate courses that will apply to the B.S. degree and the MBA degree.

**Fast Track B.S. /M.S. in Accounting and Information Management:** The M.S. in AIM is a 36 hour program. It is primarily designed to permit students to meet the educational requirements of the Texas State Board of Public Accountancy to become Certified Public Accountants. Qualified seniors may take up to 6 hours of graduate courses that will apply to the B.S. degree and the M.S. degree.

**Fast Track B.S. /M.S. in Management and Administrative Science:** Students may choose concentrations in Finance, Electronic Commerce, Organizations and Strategy, Supply Chain Management, Healthcare, and Innovation and Entrepreneurship. The Fast Track M.S. with a concentration in Finance permits students interested in career paths that require Chartered Financial Analyst (CFA®) certification to take the graduate finance courses that are required to master the complex topics covered on the CFA® examination. Qualified seniors may take up to 9 hours of graduate courses that will apply to the Bachelor of Science degree and also satisfy the requirements for an M.S. degree.

**Fast Track B.S. /M.S. in Information Technology and Management:** Students may choose a concentration in Information Technology Management and Consulting, E-Business Information Technology, or Telecommunications Management. Qualified seniors may take up to 9 hours of graduate courses that will apply to the Bachelor of Science degree and also satisfy the requirements for an M.S. degree.

**Fast Track B.S. /M.A. in International Management Studies:** The program provides students the opportunity to learn in-depth the fundamentals of functional areas of management, international management, and cultural, sociopolitical and geographical constraints affecting international business decisions. Qualified seniors may take up to 9 hours of graduate courses that will apply to the B.S. degree and also satisfy the requirements for the M.A. degree.

**Minors**

Minors are available in Business Administration, Accounting and Information Management, Finance and Entrepreneurship.

For a minor in Business Administration, students must take: BA 3361, BA 3365 and AIM 2300 with an additional 9 hours to be selected from upper-level BA and AIM courses. All course prerequisites must be met.

For a minor in Accounting and Information Management (AIM), students must take: AIM 2301, AIM 2302, and AIM 3320. Students choose an additional nine hours from upper-level AIM courses. All course prerequisites must be met.

For a minor in Finance, students must take: AIM 2300, BA 3341, BA 3390, and an additional nine hours to be selected from upper-level finance courses listed as options under the finance degree. All course prerequisites must be met.

For a minor in Entrepreneurship, students must take AIM 2300, BA 3310 (or BA 4310), BA 3365, BA 4308, and, BA 4311 with an additional 3 hours to be selected from BA 3372, BA 4335 or BA 4336. All course prerequisites must be met.
Bachelor of Science in Business Administration
Degree Requirements (120 hours)

I. Core Curriculum Requirements\(^1\): 42 hours

A. Communication (6 hours)
   3 hours Communication (RHET 1302)
   3 hours Communication Elective (BA 3311)

B. Social and Behavioral Sciences (15 hours)
   6 hours Government (GOVT 2301 and 2302)
   6 hours American History
   3 hours Social and Behavioral Science Elective (ECON 2301)

C. Humanities and Fine Arts (6 hours)
   3 hours Fine Arts (ARTS 1301)
   3 hours Humanities (HUMA 1301)

D. Mathematics and Quantitative Reasoning (6 hours)
   6 hours Calculus (MATH 1325 and 1326)

E. Science (9 hours including at least one course with a substantial laboratory component)

\(^1\) Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: 48-54 hours

Major Preparatory Courses (15 hours)

AIM 2301* Introductory Financial Accounting
AIM 2302* Introductory Management Accounting
BA 2301* Business and Public Law
ECON 2301* Principles of Macroeconomics\(^2\)
ECON 2302* Principles of Microeconomics
MATH 1325* Applied Calculus I\(^2, 3\)
MATH 1326* Applied Calculus II\(^2, 3\)
MATH 2333* Matrices, Vectors, and Their Application\(^4\)

Major Core Courses (27 hours)

BA 3311 Business Communications\(^2\)
BA 3341 Business Finance
BA 3351 Introduction to Management Information Systems
BA 3352 Production Management
BA 3361 Organizational Behavior
BA 3365 Principles of Marketing
BA 4305 Strategic Management
BA 4371 International Business
STAT 3360 Probability and Statistics for Management and Economics

Major Related Courses

Core Courses for the MIS Concentration (15 hours)
BA 4318 Programming in Visual Basic
BA 4321 Database Fundamentals
BA 4322 Systems Analysis and Design
BA 4323 Business Data Communications
BA 4326 Systems Development Project

Core Courses for the Entrepreneurship Concentration (12 hours)
BA 4308 Entrepreneurship
BA 4310 Entrepreneurial Finance
BA 4311 Entrepreneurial Strategy
BA 4335 Marketing Research

Core Courses for the International Business Concentration (9 hours)
BA 4361 International Finance Management
BA 4372 International Organizational Behavior and Human Resource Management
BA 4373 Global Strategy
Core Courses for the Marketing Concentration (9 hours)
BA 4335 Marketing Research
BA 4337 Product and Brand Management
BA 4338 Sales and Distribution Management
Core Courses for the Operations Management Concentration (9 hours)
BA 4366 Introduction to Supply Chain Management
BA 4368 Lean and Six Sigma Processes
BA 4369 Integrated SCM Information Systems

Breadth Core Courses for students not choosing a concentration — General Breadth Core Courses for students not choosing a concentration — General Business (15 hours)

Select from the following with at least 1 course from 3 of the 6 groups:

Group 1: Management
BA 3345 Introduction to Leading and Managing
BA 4308 Entrepreneurship
BA 4332 Negotiation and Dispute Resolution
BA 4333 Performance Management
BA 4372 International Organizational Behavior and Human Resource Management
BA 4373 Global Strategy

Group 2: Marketing
BA 3372 Export Market Development
or BA 3374 International Marketing
BA 4335 Marketing Research
BA 4336 Marketing Strategy
BA 4337 Product and Brand Management

Group 3: Finance and Accounting
AIM 3320 Financial Information Management
AIM 3341 Cost Management Systems
AIM 3351 Individual Taxation
AIM 4336 Financial Statement Analysis
AIM 4337 Business Valuation
BA 4310 Entrepreneurial Finance
BA 4346 Investment Management
BA 4350 Personal Financial Management and Planning

Group 4: Information Systems
AIM 3321 Managing Financial Data
or BA 4321 Database Fundamentals
AIM 4342 Analysis and Design of Accounting Systems
BA 3360 Managerial Decision Making
BA 4322 Systems Analysis and Design
BA 4323 Business Data Communications
BA 4330 Information Technology Security and Audit
BA 4356 Enterprise Resource Planning

Group 5: Business Environment
BA 3301 Employment Law
BA 4307 Corporations, Politics and Society
BA 4309 Regulation of Business and Financial Markets
BA 4345 Financial Markets and Institutions

Group 6: Operations Management
BA 3360 Managerial Decision Making
BA 4366 Introduction to Supply Chain Management
BA 4367 Introduction to Project Management
BA 4368 Lean and Six Sigma Processes
BA 4369 Integrated SCM Information Systems
A required Major course that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.

These hours are counted under Mathematics Core above; students may substitute MATH 2417 and 2419.

Students may substitute MATH 2418 or CS 2305.

Indicates a prerequisite class to be completed before enrolling for upper-division classes.

III. Elective Requirements: 24-30 hours

Advanced Electives (6 hours)

All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.

Free Electives

Both lower- and upper-division courses may count as electives but students must complete at least 51 hours of upper-division credit to qualify for graduation.

MIS Concentration: (9 hours) (6 hours must be non-business courses)

Entrepreneurship Concentration: (12 hours) (6 hours must be non-business courses)

International Business Concentration: (12 hours) (3 hours must be non-business courses)

Marketing Concentration: (12 hours) (6 hours must be non-business courses)

Operations Management Concentration: (12 hours) (6 hours must be non-business courses)

General Business: (18 hours) (6 hours must be non-business courses)

Guided Electives

MIS Concentration: (9 hours) to be selected from AIM 4343, BA 4199, BA 4299, BA 4319, BA 4320, BA 4324, BA 4328, BA 4329, BA 4330, BA 4331, BA 4355, BA 4356, BA 4V95.

Entrepreneurship Concentration: (9 hours)

Three hours to be selected from BA 3372 or BA 3374.

Six hours to be selected from AIM 3320, AIM 3341, BA 3372, BA 4309, BA 4321, BA 4336 or BA 4199 and BA 4299.

International Business Concentration: (12 hours)

Three hours to be selected from BA 3372 or BA 3374.

Three hours to be selected from BA 4311, BA 4322 or BA 4366.

Six hours to be selected from an approved list provided by the department.

Marketing Concentration: (12 hours)

Three hours to be selected from BA 3372, BA 3374, BA 4336, BA 4339 or BA 4V93.

Nine hours to be selected from BA 3372, BA 3374, BA 4308, BA 4311, BA 4329, BA 4336, BA 4339, BA 4366, BA 4199 and BA 4299, BA 4V93 or ECON 3310. If approved, the student may select from graduate marketing courses.

Operations Management Concentration: (12 hours)

Three hours to be selected from BA 3360, BA 4356, or BA 4367.

Nine hours to be selected from AIM 3341, BA 3360, BA 3372, BA 4321, BA 4332, BA 4338, BA 4356, or BA 4367.

Bachelor of Science in Business Administration and Biology

Degree Requirements (137-138 hours)*

I. Core Curriculum Requirements*: 42 hours

A. Communication (6 hours)

3 hours Communication (RHET 1302)

3 hours Communication Elective (BA 3311)

B. Social and Behavioral Sciences (15 hours)

6 hours Government (GOVT 2301 and 2302)

6 hours American History

3 hours Social and Behavioral Sciences Elective (ECON 2301)

C. Humanities and Fine Arts (6 hours)

3 hours Fine Arts (ARTS 1301)

3 hours Humanities (HUMA 1301)

D. Mathematics and Quantitative Reasoning (6 hours)

6 hours Calculus (MATH 1325 and 1326)
E. Science (9 hours)
9 hours Chemistry (CHEM 1311, 1111, 1312, 1112 and 2123)

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.
A Degree is 138 hours if students is required to take RHET 1101.

II. Major Requirements: 83 hours

Business and Management Major Preparatory Courses (15 hours beyond Core Curriculum)
AIM 2301* Introductory Financial Accounting
AIM 2302* Introductory Management Accounting
BA 2301* Business and Public Law
ECON 2301* Principles of Macroeconomics
ECON 2302* Principles of Microeconomics
MATH 1325* Applied Calculus I
MATH 1326* Applied Calculus II
MATH 2333* Matrices, Vectors, and Their Application

Business and Management Core Courses (27 hours)
BA 3311 Business Communications
BA 3341 Business Finance
BA 3351 Introduction to Management Information Systems
BA 3352 Production Management
BA 3361 Organizational Behavior
BA 3365 Principles of Marketing
BA 4305 Strategic Management
BA 4371 International Business
STAT 3360 Probability and Statistics for Management and Economics
or STAT 3332 Statistics for Life Sciences

Biology Major Preparatory Courses (15 hours beyond Core Curriculum)
CHEM 1111 General Chemistry Laboratory
CHEM 1112 General Chemistry Laboratory II
CHEM 1311 General Chemistry I
CHEM 1312 General Chemistry II
CHEM 2123* Introductory Organic Chemistry Laboratory I
CHEM 2125* Introductory Organic Chemistry Laboratory II
CHEM 2323* Introductory Organic Chemistry I
CHEM 2325* Introductory Organic Chemistry II
PHYS 1301/1101 College Physics I with Laboratory
or PHYS 3341/2125 Physics for Bio Science I with Laboratory
PHYS 1302/1102 College Physics II with Laboratory
or PHYS 3342/2126 Physics for Bio Science II with Laboratory

Biology Core Courses (29 hours)
BIOL 2111* Introduction to Modern Biology Workshop I
BIOL 2112* Introduction to Modern Biology Workshop II
BIOL 2281* Introductory Biology Laboratory
BIOL 2311* Introduction to Modern Biology I
BIOL 2312* Introduction to Modern Biology II
BIOL 3101 Classical and Molecular Genetics Workshop
BIOL 3102 Eukaryotic Molecular and Cell Biology Workshop
BIOL 3161 Biochemistry Workshop I
BIOL 3162 Biochemistry Workshop II
BIOL 3301 Classical and Molecular Genetics
BIOL 3302 Eukaryotic Molecular and Cell Biology
BIOL 3361 Biochemistry I
BIOL 3362 Biochemistry II
or BIOL 3335 Microbial Physiology
BIOL 3380 Biochemistry Laboratory

2 A required Major course that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.
3 Students may substitute Calculus (MATH 2417 and 2419).
4 Students may substitute MATH 2418 or CS 2305.

*Indicates a prerequisite class to be completed before enrolling for upper-division classes.

III. Elective Requirements: 12 hours

Advanced Electives
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites. These are satisfied with CHEM 2323 and 2325 counted under Major Preparatory Courses above.

Guided Electives (12 hours)
Business Administration: (9 hours) to be selected from any upper level AIM or BA course. If qualified, the student may select from SOM graduate courses.
Biology: (3 hours) BIOL 4380 Cell and Molecular Biology Laboratory or approved upper-level biology course.

Bachelor of Science in Accounting and Information Management
Degree Requirements (120 hours)

I. Core Curriculum Requirements1: 42 hours

A. Communication (6 hours)
  3 hours Communication (RHET 1302)
  3 hours Communication Elective (AIM 3311)

B. Social and Behavioral Sciences (15 hours)
  6 hours Government (GOVT 2301 and 2302)
  6 hours American History

C. Humanities and Fine Arts (6 hours)
  3 hours Fine Arts (ARTS 1301)
  3 hours Humanities (HUMA 1301)

D. Mathematics and Quantitative Reasoning: (6 hours)
  6 hours Calculus (MATH 1325 and 1326)

E. Science (9 hours including at least one course with a substantial laboratory component)

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: 54 hours

Major Preparatory Courses (15 hours)
AIM 2301* Introductory Financial Accounting
AIM 2302* Introductory Management Accounting
BA 2301* Business and Public Law
ECON 2301* Principles of Macroeconomics2
ECON 2302* Principles of Microeconomics
MATH 1325* Applied Calculus I2, 3
MATH 1326* Applied Calculus II2, 3
MATH 2333* Matrices, Vectors, and Their Application4

Major Core Courses (27 hours)
AIM 3311 Accounting Communications2
BA 3341 Business Finance
BA 3351 Introduction to Management Information Systems
BA 3352 Production Management
BA 3361 Organizational Behavior
BA 3365 Principles of Marketing
BA 4305 Strategic Management
BA 4371 International Business
STAT 3360 Probability and Statistics for Management and Economics

Major Related Courses for all Tracks (15 hours)
AIM 3320 Financial Information Management
AIM 3331 Intermediate Financial Accounting I
AIM 3341 Cost Management Systems
AIM 4332 Intermediate Financial Accounting II
AIM 4342 Analysis and Design of Accounting Systems

2 A required Major course that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.
3 These hours are counted under Mathematics Core above; students may substitute MATH 2417 and MATH 2419.
4 Students may substitute MATH 2418 or CS 2305.
* Indicates a prerequisite class to be completed before enrolling for upper-division classes.

III. Elective Requirements: 24 hours
Advanced Electives (6 hours)
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.
Free Electives (6 hours) (must be non-business courses)
Both lower- and upper-division courses may count as electives but students must complete at least 51 hours of upper-division credit to qualify for graduation.
Guided Electives (12 hours)
Electives may be any undergraduate chosen from a list of courses approved by the Director of Accounting and Information Management Programs. Students wishing to fast-track into the graduate program in accounting may take up to six hours of graduate AIM electives.

Bachelor of Science in Finance
Degree Requirements (120 hours)

I. Core Curriculum Requirements: 42 hours
A. Communication (6 hours)
   3 hours Communication (RHET 1302)
   3 hours Communication Elective (BA 3311)
B. Social and Behavioral Sciences (15 hours)
   6 hours Government (GOVT 2301 and 2302)
   6 hours American History
   3 hours Social and Behavioral Science Elective (ECON 2301)
C. Humanities and Fine Arts (6 hours)
   3 hours Fine Arts (ARTS 1301)
   3 hours Humanities (HUMA 1301)
D. Mathematics and Quantitative Reasoning: (6 hours)
   6 hours Calculus (MATH 1325 and 1326)
E. Science (9 hours including at least one course with a substantial laboratory component)

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: 48 hours
Major Preparatory Courses (15 hours)
AIM 2301* Introductory Financial Accounting
AIM 2302* Introductory Management Accounting
BA 2301* Business and Public Law
ECON 2301* Principles of Macroeconomics
ECON 2302* Principles of Microeconomics
MATH 1325* Applied Calculus
2
3

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MATH 1326* Applied Calculus II^2,^3  
MATH 2333* Matrices, Vectors, and Their Application^4  
Major Core Courses (27 hours)  
BA 3311 Business Communications^2  
BA 3341 Business Finance  
BA 3351 Introduction to Management Information Systems  
BA 3352 Production Management  
BA 3361 Organizational Behavior  
BA 3365 Principles of Marketing  
BA 4305 Strategic Management  
BA 4371 International Business  
STAT 3360 Probability and Statistics for Management and Economics  
Major Related Courses (6 hours)  
BA 3390 Quantitative Methods in Finance  
BA 4346 Investment Management  

^2 A required Major course that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.  
^3 Students may elect to substitute MATH 2417 and 2419.  
^4 Students may substitute MATH 2418 or CS 2305.  
*Indicates a prerequisite class to be completed before enrolling for upper-division classes.

III. Elective Requirements: 30 hours  
Advanced Electives (6 hours)  
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.  
Free Electives (12 hours) (6 hours must be non-business courses)  
Both lower- and upper-division courses may count as electives but students must complete at least 51 hours of upper-division credit to qualify for graduation.  
Guided Electives (15 hours)  
Nine hours of finance to be selected from BA 4310, BA 4345, BA 4347, BA 4348, BA 4349, BA 4350, BA 4354, BA 4360 and BA 4361  
Six hours to be selected from: AIM 3320, AIM 3331, AIM 3341, AIM 3351, AIM 4332, AIM 4336, BA 3360, BA 4199, BA 4299, BA 4309, BA 4310, BA 4345, BA 4347, BA 4348, BA 4349, BA 4350, BA 4354, BA 4361, BA 4V92, ECON 3310 and ECON 3311.

Bachelor of Science in Finance and Economics (Double Major) with an emphasis in CFA®  
Degree Requirements (126-127 hours)*

I. Core Curriculum Requirements^2; 42 hours  
A. Communication (6 hours)  
3 hours Communication (RHET 1302)  
3 hours Communication Elective (BA 3311)  
B. Social and Behavioral Sciences (15 hours)  
6 hours Government (GOVT 2301 and 2302)  
6 hours American History  
3 hours Social and Behavioral Sciences Elective (ECON 2301)  
C. Humanities and Fine Arts (6 hours)  
3 hours Fine Arts (ARTS 1301)  
3 hours Humanities (HUMA 1301)  
D. Mathematics and Quantitative Reasoning (6 hours)  
3 hours Mathematics (MATH 1325)  
3 hours Quantitative Reasoning (STAT 3360)  
E. Science (9 hours including at least one course with a substantial laboratory component)
Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

* Degree is 127 hours if student is required to take RHET 1101.

II. **Major Requirements: 57 hours**

Major Preparatory Courses (18 hours)
- AIM 2301 Introductory Financial Accounting *
- AIM 2302 Introductory Management Accounting *
- BA 2301 Business and Public Law *
- ECON 2301 Principles of Macroeconomics *
- ECON 2302 Principles of Microeconomics *
- MATH 1325 Applied Calculus I *2, 3
- MATH 1326 Applied Calculus II *2, 3
- MATH 2333 Matrices, Vectors and Their Application *4

Major Core Courses (42 hours)
- BA 3311 Business Communications
- BA 3341 Business Finance
- BA 3351 Introduction to Management Information Systems
- BA 3352 Production Management
- BA 3361 Organizational Behavior
- BA 3365 Principles of Marketing
- BA 3390 Quantitative Methods in Finance
- BA 4305 Strategic Management
- BA 4346 Investment Management
- BA 4371 International Business
- ECON 3310 Intermediate Microeconomic Theory
- ECON 3311 Intermediate Macroeconomic Theory
- ECON 4351 Mathematical Economics
- ECON 4355 Econometrics
- STAT 3360 Probability and Statistics for Management and Economics 2

III. **Guided Elective Requirements: 27 hours**

Select 9 hours from: BA 4345, BA 4347, BA 4348, BA 4349, BA 4350, BA 4354, BA 4360 and BA 4361.

Select 6 hours from: AIM 3320, AIM 3331, AIM 3351, AIM 4332, AIM 4336, AIM 4337, BA 4199 or BA 4299.

Select 12 hours from: ECON 3370, ECON 4320, ECON 4346, ECON 4346, ECON 4360, ECON 4360, ECON 4362, ECON 4382, ECON 4396, or ECON 4399.
School of Natural Sciences and Mathematics

The School of Natural Sciences and Mathematics offers both graduate and undergraduate programs in Biology and Molecular Biology, Chemistry and Biochemistry, Geosciences, Mathematical Sciences, and Physics, and a graduate program in Science Education. Undergraduate and post-baccalaureate programs in teacher certification are administratively housed in the School of Natural Sciences and Mathematics but serve other schools as well.

The undergraduate programs in Biology and Molecular Biology provide a basic foundation in molecular and cell biology to prepare students for graduate studies in biological sciences (B.S.), for professional studies in a wide variety of health-related areas, for secondary school teaching, and for employment as research assistants in pharmaceutical, biotechnology, government, and environmental science laboratories (B.S., B.A.).

The undergraduate program in Chemistry provides the fundamental knowledge required for professional participation in chemically oriented industries, for graduate study in chemistry, and for medical or dental studies (B.S.), or for secondary science teaching or ancillary positions (sales, legal, etc.) in the chemical industries (B.A.).

The undergraduate program in Geosciences provides a general scientific background suitable for some careers in business or law, for secondary school teaching (B.A.), or for employment as a professional geologist, or for graduate studies in Geosciences (B.S.).

The undergraduate programs in Mathematical Sciences (B.S.) encompass Mathematics, Statistics, and Applied Mathematics, and are designed so that students can have the opportunity to prepare for employment immediately upon graduation in a broad range of positions in business, industry, government and education - or for continuing with graduate studies in any of these areas.

The undergraduate Physics program offers a basic foundation in classical and modern physics for students interested in professional careers in physics, usually requiring graduate degrees, as well as in related fields, e.g., electrical engineering, medical physics, radiology, lasers, geophysics, computer science (B.S.), or a strong base in physics for students seeking to pursue careers in medicine, patent law, government or industrial laboratories, or secondary school teaching (B.A.).

The School of Natural Sciences and Mathematics also provides opportunities for students to complete Texas Teacher Certification requirements in Biology, Chemistry, Earth Science, Life/Earth Science, Mathematics, and Physics. Students who wish to be certified should consult the Teacher Development Center for specific requirements as soon as possible after formal admission to the University. Further details may be found in the Teacher Education section of the catalog.

Major Honors

The Departments of the School of Natural Science and Mathematics offer the opportunity for outstanding students to graduate with Honors or Honors with Distinction in their major. The program provides for these students to work individually with faculty for an in-depth experience in research.

Eligibility requirements include a) at least 30 graded hours of coursework at UTD with a cumulative grade point average of 3.75, b) at least 12 hours of upper division courses in the student’s major with a grade point average of 3.75 over all the upper division courses in the major, and c) completion of an honors thesis evaluated by two faculty members with a grade of at least B+.

The thesis would satisfy the advanced writing requirement if completed as part of a three hour research course, and submitted at least three weeks prior to the last day of classes of the term. It is then critiqued by the faculty mentor, returned to the student for revision and resubmission following the guidelines of the advanced writing requirement by the last day of classes of the term.

Honors with Distinction will be awarded to students whose theses are judged by a faculty committee of at least three members to be of exemplary quality, and if carried to fruition, would warrant publication in a journal in the field of work.
School of Natural Sciences and Mathematics

Biology (B.A., B.S.) and Molecular Biology (B.S.)

Faculty

Professors: Lee A. Bulla, Santosh D'Mello, Rockford K. Draper, Juan González, Steven R. Goodman, Donald M. Gray, Stephen D. Levene, Robert M. Marsh, Betty S. Pace, Lawrence J. Reitzer, Li Zhang

Associate Professors: Gail A.M. Breen, John G. Burr, Jeff L. DeJong, Ernest M. Hannig, Dennis L. Miller

Assistant Professors: Tianbing Xia

Professor Emeritus: Hans Bremer, Claud S. Rupert

Senior Lecturers: Vincent P. Cirillo, Robert C. Marsh, John Moltz, Scott A. Rippel, Ilya Sapozhnikov

The Biology Program at U.T. Dallas emphasizes the unifying molecular and cellular nature of organisms. At the center of the Biology undergraduate curriculum are the biochemical, genetic, and cell biology concepts and tools used to study the genes of prokaryotes and eukaryotes, to study the proteins and ribonucleic acids (RNA) encoded by these genes, and to study how the expression of these genes is regulated during the development and lifetimes of organisms. Molecular Biology represents a fusion of the four disciplines of biochemistry, biophysics, genetics, and cell biology. Modern biology requires a background in other disciplines such as chemistry, mathematics, physics, and computer sciences. Principles from these disciplines have to be merged to understand and apply new biotechnology and genetic engineering techniques. It is desirable for entering students to have a broad interest and background in the sciences.

Both B.S. and B.A. degrees are offered in Biology at U.T. Dallas; a B.S. degree is offered in Molecular Biology. The B.S. degrees are intended as preparation for scientific careers in biology or careers in the health professions. The B.A. degree is intended as liberal arts biology major with less emphasis on calculus and more free hours for course work in other disciplines. Each degree in Biology offers a streamlined double major with Business Administration or Crime and Justice Studies. Five-year Fast Track B.S. /M.S. Biology and Molecular Biology degree programs are available.

Minors are offered in Biology, Biomolecular Structure, Microbiology, Molecular and Cell Biology, and Neurobiology.

Transfer Students

Students transferring into Biology or Molecular Biology at the junior level in either the B.S. or the B.A. programs are expected to have completed courses equivalent to:

- Introductory Biology with lab, BIOL 2311, 2312, and 2281
- General Chemistry with lab, CHEM 1311, 1111, 1312, and 1112
- Organic Chemistry with lab, CHEM 2323, 2123, 2325, and 2125
- Calculus, MATH 2417 and 2419 (B.S. or B.A. degree); or Applied Calculus, MATH 1325, (B.A. degree only)
- Physics with lab, calculus-based PHYS 2325, 2125, 2326 and 2126 (B.S. or B.A. degree); or algebra-based PHYS 1301, 1101, 1302, 1102 (B.A. degree only).

Junior-level transfer students deficient in these lower-division requirements may satisfy the requirements with courses taken at U.T. Dallas; however, students deficient in the biology and chemistry requirements may be delayed in entering upper-division biology courses.

Bachelor of Arts or Bachelor of Science in Biology

Degree Requirements (124 hours)

I. Core Curriculum Requirements¹: 42 hours

A. Communication (6 hours)
   3 hours Communication (RHET 1302)
   3 hours Communication Elective (BIOL 4337, BIOL 4390, BIOL 4391, BIOL 4398, BIOL 4399 or NATS 4310)²

B. Social and Behavioral Sciences (15 hours)
   6 hours Government (GOVT 2301 and 2302)
   6 hours American History
   3 hours Social and Behavior Sciences Elective
C. Humanities and Fine Arts (6 hours)
   3 hours Fine Arts (ARTS 1301)
   3 hours Humanities (HUMA 1301)

D. Mathematics and Quantitative Reasoning (6 hours)
   6 hours Calculus (MATH 2413 and 2414) - BA or BS
   or Applied Calculus and Statistics for Life Sciences (MATH 1325 and STAT 3332) - BA only

E. Science (9 hours)
   9 hours Chemistry (CHEM 1311/1111, 1312/1112 and 2123)

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are recommended as the most efficient way to satisfy both Core Curriculum and Major requirements at UT Dallas.

II. Major Requirements: 53 - 61 hours (53-55, B.A.; 61, B.S.)

Major Preparatory Courses (16-18 hours beyond Core Curriculum)
   CHEM 1311/1111, 1312/1112 General Chemistry I and II with Laboratory
   CHEM 2323*2123* and 2325/2125 Introductory Organic Chemistry I and II with Laboratory
   MATH 2413 Differential Calculus and 2414 Integral Calculus (BA or BS)
   or MATH 1325 Applied Calculus I
   and STAT 3332 Statistics for Life Sciences (BA only)
   PHYS 3341/3041/1101 Physics for Bio Science I with Recitation/Laboratory (BA or BS)
   or PHYS 1301/1101 College Physics I with Laboratory (BA only)
   PHYS 3342/3041/1102 Physics for Bio Science II with Recitation/Laboratory (BA or BS)
   or PHYS 1302/1102 College Physics II with Laboratory (BA only)

Major Core Courses (29-32 hours)
   BIOL 2281* Introductory Biology Laboratory
   BIOL 2111* Introduction to Modern Biology Workshop
   BIOL 2112* Introduction to Modern Biology Workshop II
   BIOL 2311* Introduction to Modern Biology I
   BIOL 2312* Introduction to Modern Biology II
   BIOL 3101 Classical and Molecular Genetics Workshop
   BIOL 3102 Eukaryotic Molecular and Cell Biology Workshop
   BIOL 3161 Biochemistry Workshop I
   BIOL 3162 Biochemistry Workshop II
   BIOL 3301 Classical and Molecular Genetics
   BIOL 3302 Eukaryotic Molecular and Cell Biology
   BIOL 3361 Biochemistry I
   BIOL 3362 Biochemistry II
   or BIOL 3335 Microbial Physiology
   BIOL 3380 Biochemistry Laboratory
   BIOL 4380 Cell and Molecular Biology Laboratory (BS only)

Major Related Courses (9-12 hours)4
   9 hours upper-division BIOL electives (BA only)
   12 hours upper-division BIOL electives (BS only)

2 Biology majors may choose BIOL 4337, BIOL 4390, BIOL 4391, BIOL 4398, BIOL 4399 or NATS 4310 or another approved Biology elective to fulfill the Core Curriculum Communication Elective.

3 Six hours of Calculus are counted under Mathematics Core, and 2 hours of Calculus are counted as Major Preparatory Courses.

4 Up to 3 hours of individual instruction may be used in fulfilling this requirement.

* Indicates a prerequisite class to be completed before enrolling for upper-division classes.

III. Elective Requirements: 21 - 29 hours

Advanced Electives
   All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites. These may be satisfied with CHEM 2323 and 2325, counted under Major Preparatory Courses.

Free Electives (21 hours for BS; 27-29 hours for BA)
   All students must complete at least 51 hours of upper-division credit to graduate.
Bachelor of Science in Molecular Biology
Degree Requirements (129 hours)

I. Core Curriculum Requirements\(^1\): 41 hours

A. Communication (6 hours)
   3 hours Communication (RHET 1302)
   3 hours Communication Elective (BIOL 4337, BIOL 4390, BIOL 4391, BIOL 4398, BIOL 4399 or NATS 4310)\(^2\)

B. Social and Behavioral Sciences (15 hours)
   6 hours Government (GOVT 2301 and 2302)
   6 hours American History
   3 hours Social and Behavior Sciences Elective

C. Humanities and Fine Arts (6 hours)
   3 hours Fine Arts (ARTS 1301)
   3 hours Humanities (HUMA 1301)

D. Mathematics and Quantitative Reasoning (6 hours)
   6 hours Calculus (MATH 2417 and 2419)\(^3\)

E. Science (9 hours)
   9 hours Chemistry (CHEM 1311/1111, 1312/1112 and 2123)

\(^1\) Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are recommended as the most efficient way to satisfy both Core Curriculum and Major requirements at UT Dallas.

II. Major Requirements: 68-69 hours

Major Preparatory Courses (20-21 hours beyond Core Curriculum)
- CHEM 1111 General Chemistry Laboratory I
- CHEM 1112 General Chemistry Laboratory II
- CHEM 1311 General Chemistry I
- CHEM 1312 General Chemistry II
- CHEM 2123* Introductory Organic Chemistry Laboratory I
- CHEM 2125 Introductory Organic Chemistry Laboratory II
- CHEM 2323* Introductory Organic Chemistry I
- CHEM 2325 Introductory Organic Chemistry II
- MATH 2417 Calculus I
- MATH 2419 Calculus II
- MATH 2418 Linear Algebra
- PHYS 2125 Physics Laboratory I
- PHYS 2126 Physics Laboratory II
- PHYS 3341/3041 Physics for Bio Science I with Recitation
- PHYS 3342/3042 Physics for Bio Science II with Recitation

Major Core Courses (36 hours)
- BIOL 2111* Introduction to Modern Biology Workshop I
- BIOL 2112* Introduction to Modern Biology Workshop II
- BIOL 2281* Introductory Biology Laboratory
- BIOL 2311*Introduction to Modern Biology I
- BIOL 2312* Introduction to Modern Biology II
- BIOL 3101 Classical and Molecular Genetics Workshop
- BIOL 3102 Eukaryotic Molecular and Cell Biology Workshop
- BIOL 3161 Biochemistry Workshop I
- BIOL 3162 Biochemistry Workshop II
- BIOL 3301 Classical and Molecular Genetics
- BIOL 3302 Eukaryotic Molecular and Cell Biology
- BIOL 3361 Biochemistry I
- BIOL 3362 Biochemistry II
  or BIOL 3335 Microbial Physiology
- BIOL 3380 Biochemistry Laboratory
BIOL 4380 Cell & Molecular Biology Laboratory
  or BIOL 3V96 (3 hours) Undergraduate Research in Molecular and Cell Biology
  or BIOL 4399 (3 hours) Senior Honors Research in Molecular and Cell Biology
BIOL 4461 Biophysical Chemistry
Major Related Courses (12 hours)  
  12 hours upper-division approved molecular biology-related BIOL or CHEM electives

2 Molecular Biology majors may choose BIOL 4337, BIOL 4390, BIOL 4391, BIOL 4398, BIOL 4399, NATS 4310 or another approved Biology elective to fulfill the Core Curriculum Communication Elective.
3 Six hours of Calculus are counted under Mathematics Core, and 2 hours of Calculus are counted as Major Preparatory Courses.
4 These substitutes for BIOL 4380 require permission of the Biology Undergraduate Advisor to ensure equivalent training in recombinant DNA analysis.
5 Up to 6 hours of research may be used in fulfilling the major related course requirement.
* Indicates a prerequisite class to be completed before enrolling for upper-division classes.

III. Elective Requirements: 18-19 hours
Advanced Electives
  All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites. These may be satisfied with CHEM 2323 and 2325, counted under Major Preparatory Courses.
Free Electives (18-19 hours)
  All students must complete at least 51 hours of upper-division credit to graduate.

Bachelor of Arts or Bachelor of Science in Biology and Business Administration Degree Requirements (Double Major - 134-136 hours)

I. Core Curriculum Requirements: 42 hours
  A. Communication (6 hours)
    3 hours Communication (RHET 1302)
    3 hours Communication Elective (BA 4305)  
  B. Social and Behavioral Sciences (15 hours)
    6 hours Government (GOVT 2301 and 2302)
    6 hours American History
    3 hours Social and Behavioral Sciences Elective (ECON 2301)  
  C. Humanities and Fine Arts (6 hours)
    3 hours Fine Arts (ARTS 1301)
    3 hours Humanities (HUMA 1301)
  D. Mathematics and Quantitative Reasoning (6 hours)
    6 hours Calculus (MATH 2413 and 2414)  - BA or BS
    or Applied Calculus (MATH 1325 and 1326) - BA only
  E. Science (9 hours)
    9 hours Chemistry (CHEM 1311/1111, 1312/1112 and 2123)

 1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are recommended as the most efficient way to satisfy both Core Curriculum and Major requirements at UT Dallas.

II. Major Requirements: 80-82 hours
Biology Major Preparatory Courses (15-17 hours beyond Core Curriculum)
  CHEM 1111 General Chemistry Laboratory I
  CHEM 1112 General Chemistry Laboratory II
  CHEM 1311 General Chemistry I
  CHEM 1312 General Chemistry II
  CHEM 2123* Introductory Organic Chemistry Laboratory I
  CHEM 2125* Introductory Organic Chemistry Laboratory II
  CHEM 2323* Introductory Organic Chemistry I
  CHEM 2325* Introductory Organic Chemistry II

 2 Molecular Biology majors may choose BIOL 4337, BIOL 4390, BIOL 4391, BIOL 4398, BIOL 4399, NATS 4310 or another approved Biology elective to fulfill the Core Curriculum Communication Elective.
3 Six hours of Calculus are counted under Mathematics Core, and 2 hours of Calculus are counted as Major Preparatory Courses.
4 These substitutes for BIOL 4380 require permission of the Biology Undergraduate Advisor to ensure equivalent training in recombinant DNA analysis.
5 Up to 6 hours of research may be used in fulfilling the major related course requirement.
* Indicates a prerequisite class to be completed before enrolling for upper-division classes.
MATH 2413 Differential Calculus and 2414 Integral Calculus (BA or BS)  
  *or MATH 1325 and 1326 Applied Calculus I and II (BA only)
PHYS 3341/3041/1101 Physics for BioScience I with Recitation/Laboratory (BA or BS)  
  *or PHYS 1301/1101 College Physics I with Laboratory (BA only)
PHYS 3342/3042 Physics for BioScience II with Recitation/Laboratory (BA or BS)  
  *or PHYS 1302/1102 College Physics II with Laboratory (BA only)

**Biology Major Core Courses (29 hours)**

- BIOL 2111* Introduction to Modern Biology Workshop I
- BIOL 2112* Introduction to Modern Biology Workshop II
- BIOL 2281* Introductory Biology Laboratory
- BIOL 2311* Introduction to Modern Biology I
- BIOL 2312* Introduction to Modern Biology II
- BIOL 3101 Classical and Molecular Genetics Workshop
- BIOL 3102 Eukaryotic Molecular and Cell Biology Workshop
- BIOL 3161 Biochemistry Workshop I
- BIOL 3162 Biochemistry Workshop II
- BIOL 3301 Classical and Molecular Genetics
- BIOL 3302 Eukaryotic Molecular and Cell Biology
- BIOL 3361 Biochemistry I
- BIOL 3362 Biochemistry II
  *or BIOL 3335 Microbial Physiology
- BIOL 3380 Biochemistry Laboratory

**Business Administration Major Preparatory Courses (15 hours beyond Core Curriculum)**

- AIM 2301* Introductory Financial Accounting
- AIM 2302* Introductory Management Accounting
- BA 2301* Business and Public Law
- ECON 2301* Principles of Macroeconomics
- ECON 2302* Principles of Microeconomics
- MATH 2333* Matrices, Vectors and Their Application

**Business Administration Core Courses (21 hours)**

- BA 3341 Business Finance
- BA 3351 Introduction to Management Information Systems
- BA 3352 Production Management
- BA 3361 Organizational Behavior
- BA 3365 Principles of Marketing
- BA 4305 Strategic Management
  *or BA 4371 International Business
- STAT 3360 Probability and Statistics for Management and Economics
  *or STAT 3332 Statistics for Life Sciences

2 A required Major course that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.
3 Six hours of Calculus are counted under Mathematics Core, and 2 hours of Calculus are counted as Major Preparatory Courses.
* Indicates a prerequisite class to be completed before enrolling for upper-division classes.

**III. Elective Requirements: 12 hours**

**Advanced Electives**

All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites. These may be satisfied with CHEM 2323 and 2325, counted under Major Preparatory Courses.

**Guided Electives (12 hours)**

- Business Administration (9 hours): To be selected from AIM and BA courses.
- Biology (3 hours): BIOL 4380 Cell and Molecular Biology Laboratory (must be taken for the Biology elective in BS only). All students must complete at least 51 hours of upper-division credit to graduate.
Bachelor of Science in Molecular Biology and Business Administration Degree Requirements (Double Major – 140 hours)

I. Core Curriculum Requirements: 42 hours
A. Communication (6 hours)
   3 hours Communication (RHET 1302)
   3 hours Communication Elective (BA 4305)
B. Social and Behavioral Sciences (15 hours)
   6 hours Government (GOVT 2301 and 2302)
   6 hours American History
   3 hours Social and Behavior Sciences Elective (ECON 2301)
C. Humanities and Fine Arts (6 hours)
   3 hours Fine Arts (ARTS 1301)
   3 hours Humanities (HUMA 1301)
D. Mathematics and Quantitative Reasoning (6 hours)
   6 hours Calculus (MATH 2417 and 2419)
E. Science (9 hours)
   9 hours Chemistry (CHEM 1311/1111, 1312/1112 and 2123)

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are recommended as the most efficient way to satisfy both Core Curriculum and Major requirements at UT Dallas.

II. Major Requirements: 86 hours
Biology Major Preparatory Courses (17 hours beyond Core Curriculum)
   CHEM 1111 General Chemistry Laboratory I
   CHEM 1112 General Chemistry Laboratory II
   CHEM 1311 General Chemistry I
   CHEM 1312 General Chemistry II
   CHEM 2123* Introductory Organic Chemistry Laboratory I
   CHEM 2125* Introductory Organic Chemistry Laboratory II
   CHEM 2323* Introductory Organic Chemistry I
   CHEM 2325* Introductory Organic Chemistry II
   MATH 2417 Calculus 1
   MATH 2419 Calculus II
   PHYS 3341/3041/1101 Physics for Bio Science I with Recitation/Laboratory
   PHYS 3342/3402/1102 Physics for Bio Science II with Recitation/Laboratory
Biology Major Core Courses (33 hours)
   BIOL 2111* Introduction to Modern Biology Workshop I
   BIOL 2112* Introduction to Modern Biology Workshop II
   BIOL 2281* Introductory Biology Laboratory
   BIOL 2311* Introduction to Modern Biology I
   BIOL 2312* Introduction to Modern Biology II
   BIOL 3101 Classical and Molecular Genetics Workshop
   BIOL 3102 Eukaryotic Molecular and Cell Biology Workshop
   BIOL 3161 Biochemistry Workshop I
   BIOL 3162 Biochemistry Workshop II
   BIOL 3301 Classical and Molecular Genetics
   BIOL 3302 Eukaryotic Molecular and Cell Biology
   BIOL 3361 Biochemistry I
   BIOL 3362 Biochemistry II
   3335 Microbial Physiology
   BIOL 3380 Biochemistry Laboratory
   BIOL 4461 Biophysical Chemistry
Business Administration Major Preparatory Courses (15 hours beyond Core Curriculum)
   AIM 2301* Introductory Financial Accounting
School of Natural Sciences and Mathematics

AIM 2302* Introductory Management Accounting
BA 2301* Business and Public Law
ECON 2301* Principles of Macroeconomics 2
ECON 2302* Principles of Microeconomics
MATH 2333* Matrices, Vectors and Their Application

Business Administration Core Courses (21 hours)
BA 3341 Business Finance
BA 3351 Introduction to Management Information Systems
BA 3352 Production Management
BA 3361 Organizational Behavior
BA 3365 Principles of Marketing
BA 4305 Strategic Management 2
BA 4371 International Business
STAT 3360 Probability and Statistics for Management and Economics
or STAT 3332 Statistics for Life Sciences

2 A required Major course that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.
3 Six hours of Calculus are counted under Mathematics Core, and 2 hours of Calculus are counted as Major Preparatory Courses.
* Indicates a prerequisite class to be completed before enrolling for upper-division classes.

III. Elective Requirements: 12 hours

Advanced Electives
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites. These may be satisfied with CHEM 2323 and 2325, counted under Major Preparatory Courses.

Guided Electives (12 hours)
Business Administration (9 hours): To be selected from AIM and BA courses.
Biology (3 hours): To be selected from BIOL 4380, BIOL 3V96 (3 hours) 4 and BIOL 4399 (3 hours) 4
All students must complete at least 51 hours of upper-division credit to graduate.

4 Requires permission of the Biology Undergraduate Advisor to ensure training in recombinant DNA analysis.

Bachelor of Arts or Bachelor of Science in Biology and Criminology Degree Requirements (Double Major – 122-124 hours)

I. Core Curriculum Requirements: 42 hours

A. Communication (6 hours)
   3 hours Communication (RHET 1302)
   3 hours Communication Elective (BIOL 4337, BIOL 4390, BIOL 4391, BIOL 4398, BIOL 4399, CRIM 3300, or NATS 4310) 2
B. Social and Behavioral Sciences (15 hours)
   6 hours Government (GOVT 2301 and 2302)
   6 hours American History
   3 hours Social and Behavior Sciences Elective (ECON 2301 or 2302) 3
C. Humanities and Fine Arts (6 hours)
   3 hours Fine Arts (ARTS 1301)
   3 hours Humanities (HUMA 1301)
D. Mathematics and Quantitative Reasoning (6 hours)
   6 hours Calculus (MATH 2413 and 2414) 4 – BA or BS
   or Applied Calculus (MATH 1325) and either Statistics for Life Sciences (STAT 3332) or Introduction to Social Statistics with
   Laboratory (SOCS 3405) – BA only
E. Science (9 hours)
   9 hours Chemistry (CHEM 1311/1111, 1312/1112 and 2123)
II. Major Requirements: 68-70 hours

Biology Major Preparatory Courses (15-17 hours beyond Core Curriculum)

CHEM 1111 General Chemistry Laboratory I
CHEM 1112 General Chemistry Laboratory II
CHEM 1311 General Chemistry I
CHEM 1312 General Chemistry II
CHEM 2123* Introductory Organic Chemistry Laboratory I
CHEM 2125* Introductory Organic Chemistry Laboratory II
CHEM 2323* Introductory Organic Chemistry I
CHEM 2325* Introductory Organic Chemistry II

MATH 2413 Differential Calculus and 2414 Integral Calculus (BA or BS) ³

or MATH 1325 Applied Calculus I
and either
STAT 3332 Statistics for Life Sciences
or SOC 3405 Introduction to Social Statistics with Lab (BA only)

PHYS 3341/3041/1101 Physics for BioScience I with Recitation/Laboratory (BA or BS)

or PHYS 1301/1101 College Physics I with Laboratory (BA only)

PHYS 3342/3042/1102 Physics for BioScience II with Recitation/Laboratory (BA or BS)

or PHYS 1302/1102 College Physics II with Laboratory (BA only)

Biology Major Core Courses (32 hours)

BIOL 2111* Introduction to Modern Biology Workshop I
BIOL 2112* Introduction to Modern Biology Workshop II
BIOL 2281* Introductory Biology Laboratory
BIOL 2311* Introduction to Modern Biology I
BIOL 2312* Introduction to Modern Biology II
BIOL 3101 Classical and Molecular Genetics Workshop
BIOL 3102 Eukaryotic Molecular and Cell Biology Workshop
BIOL 3161 Biochemistry Workshop I

BIOL 3162 Biochemistry Workshop II

or BIOL 3335 Microbial Physiology
BIOL 3301 Classical and Molecular Genetics
BIOL 3302 Eukaryotic Molecular and Cell Biology
BIOL 3318 Forensic Biology
BIOL 3361 Biochemistry I
BIOL 3362 Biochemistry II

BIOL 3380 Biochemistry Laboratory

Crime and Justice Studies Major Preparatory Course (No hours beyond Core Curriculum)

ECON 2301 Principles of Macroeconomics

or ECON 2302 Principles of Microeconomics ³

Crime and Justice Studies Core Courses (18 hours)

CRIM 3300 Crime and Civil Liberties
CRIM 3301 Theories of Justice

or another Social Science course with a distributive justice emphasis such as SOC 4361 Law and Society, or ECON 4320 Public Sector Economics

CRIM 3302 Advanced Criminology
CRIM 3303 Advanced Criminal Justice
CRIM 3304 Research Methods in Crime and Justice Studies
CRIM 3319 Comparative Justice Systems
CRIM 4305 Social Control and Criminal Sanctions
CRIM 4321 Senior Research Seminar

² Double majors may choose BIOL 4337, BIOL 4390, BIOL 4391, BIOL 4398, BIOL 4399, CRIM 3301, PSCI 3325, NATS 4310 or another approved Biology elective to fulfill the Core Curriculum Communication Elective.

³ A required Major course that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.
III. Elective Requirements: 15 hours

Advanced Electives
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites. These may be satisfied with CHEM 2323 and 2325, counted under Major Preparatory Courses.

Guided Electives (15 hours)
Biology (6 hours): BIOL 4380 Cell and Molecular Biology Laboratory (must be taken for one of the Biology electives in BS only).
Crime and Justice Studies and Related Electives (9 hours): All students must complete at least 51 hours of upper-division credit to graduate.

Bachelor of Science in Molecular Biology and Criminology Degree Requirements (Double Major – 128-129 hours)

I. Core Curriculum Requirements: 42 hours

A. Communication (6 hours)
   3 hours Communication (RHET 1302)
   3 hours Communication Elective (BIOL 4337, BIOL 4390, BIOL 4391, BIOL 4398, BIOL 4399, CRIM 3300, or NATS 4310)²

B. Social and Behavioral Sciences (15 hours)
   6 hours Government (GOVT 2301 and 2302)
   6 hours American History
   3 hours Social and Behavior Sciences Elective (ECON 2301 or 2302)³

C. Humanities and Fine Arts (6 hours)
   3 hours Fine Arts (ARTS 1301)
   3 hours Humanities (HUMA 1301)

D. Mathematics and Quantitative Reasoning (6 hours)
   6 hours Calculus (MATH 2417 and 2419)⁴

E. Science (9 hours)
   9 hours Chemistry (CHEM 1311/1111, 1312/1112 and 2123)

² Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are recommended as the most efficient way to satisfy both Core Curriculum and Major requirements at UT Dallas.

II. Major Requirements: 77-78 hours

Biology Major Preparatory Courses (20-21 hours beyond Core Curriculum)
CHEM 1111 General Chemistry Laboratory I
CHEM 1112 General Chemistry Laboratory II
CHEM 1311 General Chemistry I
CHEM 1312 General Chemistry II
CHEM 2123* Introductory Organic Chemistry Laboratory I
CHEM 2125* Introductory Organic Chemistry Laboratory II
CHEM 2323* Introductory Organic Chemistry I
CHEM 2325* Introductory Organic Chemistry II
MATH 2417 Calculus I ³
MATH 2419 Calculus II ³
MATH 2418 Linear Algebra
   or STAT 3332 Statistics for Life Sciences
   or SOCS 3405 Introduction to Social Statistics with Lab
PHYS 3341/3041/1101 Physics for Bio Science I with Recitation/Laboratory
PHYS 3342/3042/1102 Physics for Bio Science II with Recitation/Laboratory

Biology Major Core Courses (36 hours)
BIOL 2111* Introduction to Modern Biology Workshop I
BIOL 2112* Introduction to Modern Biology Workshop II
BIOL 2281* Introductory Biology Laboratory
BIOL 2311* Introduction to Modern Biology I
BIOL 2312* Introduction to Modern Biology II
BIOL 3101 Classical and Molecular Genetics Workshop
BIOL 3102 Eukaryotic Molecular and Cell Biology Workshop
BIOL 3161 Biochemistry Workshop I
BIOL 3162 Biochemistry Workshop II
BIOL 3301 Classical and Molecular Genetics
BIOL 3302 Eukaryotic Molecular and Cell Biology
BIOL 3318 Forensic Biology
BIOL 3361 Biochemistry I
BIOL 3362 Biochemistry II
or BIOL 3335 Microbial Physiology
BIOL 3380 Biochemistry Laboratory
BIOL 4461 Biophysical Chemistry

Crime and Justice Studies Major Preparatory Course (No hours beyond Core Curriculum)
ECON 2301 Principles of Macroeconomics
or ECON 2302 Principles of Microeconomics

Crime and Justice Studies Core Courses (18 hours)
CRIM 3300 Crime and Civil Liberties
CRIM 3301 Theories of Justice
or another Social Science course with a distributive justice emphasis such as SOC 4361 Law and Society, or
ECON 4320 Public Sector Economics
CRIM 3302 Advanced Criminology
CRIM 3303 Advanced Criminal Justice
CRIM 3304 Research Methods in Crime and Justice Studies
CRIM 3319 Comparative Justice Systems
CRIM 4305 Social Control and Criminal Sanctions
CRIM 4321 Senior Research Seminar

2 Double majors may choose BIOL 4337, BIOL 4390, BIOL 4391, BIOL 4398, BIOL 4399, CRIM 3301, PSCI 3325, NATS 4310 or another approved Biology elective to fulfill the Core Curriculum Communication Elective.
3 A required Major course that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.
4 Six hours of Calculus are counted under Mathematics Core, and 2 hours of Calculus are counted as Major Preparatory Courses.
* Indicates a prerequisite class to be completed before enrolling for upper-division classes.

III. Elective Requirements: 12 hours

Advanced Electives
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites. These may be satisfied with CHEM 2323 and 2325, counted under Major Preparatory Courses.

Guided Electives (12 hours)
Crime and Justice Studies and Related Electives (9 hours): All students must complete at least 51 hours of upper-division credit to graduate.
Biology (3 hours): To be selected from BIOL 4380, BIOL 3V96 (3 hours) \(^5\) and BIOL 4399 (3 hours)\(^5\)
All students must complete at least 51 hours of upper-division credit to graduate.

\(^5\) Requires permission of the Biology Undergraduate Advisor to ensure training in recombinant DNA analysis.

Minor in Biology
Course Requirements: 18 hours
BIOL 2311/2111 Introduction to Modern Biology I with Workshop
BIOL 3301/3101 Classical and Molecular Genetics with Workshop
BIOL 3361/3161 Biochemistry I with Workshop
Two BIOL electives for majors
Minor in Biomolecular Structure
Course Requirements: 18 hours
- BIOL 3336 Protein and Nucleic Acid Structure
- BIOL 4461 Biophysical Chemistry, unless taken to fulfill the Molecular Biology major requirements
- BIOL 4261 Biomolecular Modeling
- CHEM 2323 and 2325 Introductory Organic Chemistry I and II
- One to two approved BIOL, CHEM, CS, EE, MATH, or PHYS electives

Minor in Molecular and Cell Biology
Course Requirements: 18 hours
- CHEM 2323 and 2325 Introductory Organic Chemistry I and II
- Four approved molecular and cell biology electives

Minor in Microbiology
Course Requirements: 18 hours
- BIOL 3V20 General Microbiology with Laboratory\(^1\)
- BIOL 3335 Microbial Physiology\(^2\)
- BIOL 4350 Medical Microbiology
  - or BIOL 4316 Parasites and Symbionts
- BIOL 4345 Immunobiology
- CHEM 2323 Introductory Organic Chemistry I
- One approved microbiology elective

\(^1\) Two hrs of BIOL 3V20 may be used to satisfy the Cell and Molecular Biology Laboratory core requirement for Biology and Molecular Biology majors.
\(^2\) May be substituted with CHEM 2325 Introductory Chemistry II if used to satisfy the Biochemistry II core requirement for Biology and Molecular Biology majors.

Minor in Neurobiology
Course Requirements: 18 hours
- BIOL 4370 Developmental Neurobiology
- BIOL 3371 Biology of the Brain
  - or NSC 4352 Cellular Neuroscience
- CHEM 2323 and 2325 Introductory Organic Chemistry I and II
- NSC 4353 Neuroscience Laboratory Methods
- NSC 4354 Integrative Neuroscience

Fast Track Baccalaureate/Master's Degrees
U.T. Dallas undergraduate students with strong academic records, including at least 15 hours of upper-division Biology core courses, who intend to pursue graduate work in Biology at U.T. Dallas, may apply for the Fast Track which involves taking selected graduate courses as an upper-division student. After admission to the graduate program, 15 hours of graduate courses with an earned grade of B or better can be used toward completion of the B.S. and to satisfy requirements for those courses at the graduate level. Graduate courses must be approved by the graduate advisor. This program provides an opportunity to obtain the B.S. degree in Biology after 124 hours of work and an M.S. degree in Molecular and Cell Biology after an additional 21 hours of graduate course and research work. Interested students should contact the Biology undergraduate advisor well in advance of the senior year to prepare a degree plan taking maximal advantage of this 5-year Fast Track program.
Degree Planning

Upper-division biology courses taken at other institutions may be included as part of the degree plan subject to the provisions of the section on Transfer Admissions.

Major-related courses may not include more than 9 hours (B.S.) or 6 hours (B.A.) of upper-division transfer credit and not more than 3 hours (Biology major) or 6 hours (Molecular Biology major) of individual instruction (e.g., BIOL 3V90, BIOL 3V91, BIOL 3V92, BIOL 3V95, BIOL 3V96, BIOL 4302, BIOL 4390, BIOL 4391, BIOL 4398, BIOL 4399, BIOL 4V98, or BIOL 4V99).

Students planning a career in a particular allied health profession should consult the school they expect to attend to apprise themselves of the course requirements for admission.

Admission standards for medical and dental schools are set by the individual professional school, whose specific requirements should be reviewed with the help of the U.T. Dallas Health Professions Education Advisors. Most professional schools prefer that admission applications be channeled through the Health Professions Education Office.

Biochemistry (B.S.)

The Biochemistry program at U.T. Dallas, administered through the Department of Chemistry, draws on faculty from the Departments of Chemistry, Molecular and Cell Biology, and researchers from U.T. Southwestern Medical School to provide courses and research opportunities to its majors. The Biochemistry major bridges the gap between modern Chemistry and Biology. The curriculum, designed to prepare students for either graduate work in the Biological Sciences, the Chemical Sciences, or for entry-level positions in the biotechnology industry, builds on a base of biology, chemistry, physics, and mathematics to provide the student the opportunity to develop essential theoretical and practical skills.

Faculty

Chemistry:

Robert A. Welch Chair in Chemistry, Professor of Chemistry: Ray H. Baughman
Cecil and Ida Green Distinguished Chair in Systems Biology; Professor of Chemistry: A. Dean Sherry
Cecil and Ida Green Chair in Systems Biology; Professor of Chemistry: John P. Ferraris

Professors: Kenneth J. Balkus, Jr., Rockford K. Draper (Biology), Bruce E. Gnade (Electrical Engineering)
Associate Professors: Michael C. Biewer, Gregg R. Dieckmann, Warren J. Goux, Inga H. Musselman, Paul Pantano, John W. Sibert IV
Assistant Professors: Jung-Mo Ahn, Steven O. Nielsen
Affiliated Professors: Lee A. Bulla (Biology), Anvar A. Zakhidov (Physics)
Research Professors: Gary E. Kiefer, Duck Joo Yang
Emeritus Professor: Richard A. Caldwell
Senior Lecturers: Sergio Cortes, Sandhya R. Gavva

Molecular and Cell Biology:

Professors: Lee A. Bulla, Santosh D’Mello, Rockford K. Draper, Juan E. González, Steven R. Goodman, Donald M. Gray, Steven D. Levene, Betty S. Pace, Lawrence J. Reitzer, Li Zhang
Associate Professors: Gail A.M. Breen, John G. Burr, Jeff L. Delong, Ernest M. Hannig, Dennis L. Miller, Stephen Spiro
Assistant Professor: Tianbing Xia
Senior Lecturers: Vincent P. Cirillo, Robert C. Marsh, John Moltz, Scott A. Rippel, Ilya Sapozhnikov

U.T. Southwestern Medical School:

UTD Biochemistry majors may perform their research in the laboratories of faculty members from the departments of Biochemistry, Internal Medicine, Pharmacology and Physiology at U.T. Southwestern, as available.
Bachelor of Science in Biochemistry
Degree Requirements (B.S. 129 hours)

I. Core Curriculum Requirements: 42 hours
A. Communication (6 hours)
   3 hours Communication (RHET 1302)
   1 hour Oral Communication (RHET 1101)
   3 hours Communication Elective (Satisfied by BIOL/CHEM 4390 or equivalent)
B. Social and Behavioral Sciences (15 hours)
   6 hours Government (GOVT 2301 and 2302)
   6 hours American History
   3 hours Social and Behavioral Sciences Elective
C. Humanities and Fine Arts (6 hours)
   3 hours Fine Arts (ARTS 1301)
   3 hours Humanities (HUMA 1301)
D. Mathematics and Quantitative Reasoning (6 hours)
   6 hours Calculus (MATH 2417 and 2419)
E. Science (9 hours)
   Introductory Chemistry (CHEM 1311/1111, 1312/1112, and 2401)

II. Major Requirements:
Major Preparatory Courses (29 hours beyond core curriculum)
BIOL 2111 Introduction to Modern Biology Workshop I
BIOL 2311 Introduction to Modern Biology I
CHEM 1111 General Chemistry Laboratory I
   CHEM 1115 Honors Freshman Chemistry Laboratory I
CHEM 1112 General Chemistry Laboratory II
   CHEM 1116 Honors Freshman Chemistry Laboratory II
CHEM 1311 General Chemistry I
   CHEM 1315 Honors Freshman Chemistry I
CHEM 1312 General Chemistry II
   CHEM 1316 Honors Freshman Chemistry II
CHEM 2123 Introductory Organic Chemistry Laboratory I*
CHEM 2125 Introductory Organic Chemistry Laboratory II*
CHEM 2323 Introductory Organic Chemistry I*
CHEM 2325 Introductory Organic Chemistry II*
CHEM 2401 Introductory Quantitative Methods in Chemistry
MATH 2417 Calculus I
MATH 2419 Calculus II
MATH 2451 Multivariable Calculus with Applications
PHYS 2125 Physics Laboratory I
PHYS 2126 Physics Laboratory II
PHYS 2325 Mechanics
   PHYS 3341 Physics for Bio Science I
   PHYS 2421 Honors Physics I – Mechanics and Heat
PHYS 2326 Electromagnetism and Waves
   PHYS 3342 Physics for Bio Science II
   PHYS 2422 Honors Physics II – Electromagnetism and Waves

Major Core Courses (40 hours beyond core curriculum)
BIOL 3101 Classical and Molecular Genetics Workshop
BIOL 3102 Eukaryotic Molecular and Cell Biology Workshop
BIOL 3161 Biochemistry Workshop I
BIOL 3162 Biochemistry Workshop II
BIOL 3301 Classical and Molecular Genetics
BIOL 3302 Eukaryotic Molecular and Cell Biology
BIOL 3380 Biochemistry Laboratory
BIOL/CHEM 3361 Biochemistry I
BIOL/CHEM 3362 Biochemistry II
BIOL 3V93 (3 hours) Undergraduate Research in Biochemistry 4
  or CHEM 3V92 (3 hours) Undergraduate Research in Biochemistry 4
  or CHEM 4V91 (3 hours) Research in Chemistry 4
CHEM 3321 Physical Chemistry I
CHEM 3322 Physical Chemistry II
CHEM 3472 Instrumental Analysis
CHEM 4390 Research and Advanced Writing in Chemistry 2, 4
  or BIOL 4391 Senior Research in Molecular and Cell Biology (Advanced Writing) 2, 4
  or BIOL 4399 Senior Honors Research in Molecular and Cell Biology (Thesis/Advanced Writing) 2, 4 or CHEM 4399
Research and Advanced Writing in Chemistry for Honors Students 2, 4
Any two upper-division Chemistry or Biology electives (6 hours) not taken to fulfill above.

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.
2 A required Major course that also fulfills Core Curriculum requirements. If hours are counted in the Core Curriculum, students must complete additional coursework to meet the minimum requirement for graduation. Course selection assistance is available from the undergraduate advisor.
3 Hours above the Core Curriculum requirement are counted as part of the Major Preparatory Courses.
4 Undergraduate Research in Biochemistry (BIOL 3V93/3V92), Research in Chemistry (CHEM 4V91), Research and Advanced Writing in Advanced Chemistry (CHEM 4390), Senior Research in Molecular and Cell Biology (Advanced Writing) (BIOL 4391), Senior Honors Research in Molecular and Cell Biology (Thesis/Advanced Writing) (BIOL 4399), and Research and Advanced Writing in Chemistry for Honors Students (CHEM 4399) are better defined as a project than a course and constitutes an important part of the B. S. degree. The student conducts original research under the supervision of a faculty member, then must submit a research report which is defended orally in an undergraduate research symposium during the spring semester of their senior year. Normally this project will span two or more semesters. A complete set of guidelines is available from the undergraduate advisor.

* Indicates a prerequisite class to be completed before enrolling for upper-division classes.

III. Elective Requirements: 18 hours
Advanced Electives (6 hours)
  These courses must be outside the major and be upper-division and/or have prerequisites.
Free Electives (12 hours)
  The plan must include sufficient upper-division credit to total 51 upper-division credit hours.
STAT 3332 Statistics for Life Sciences is strongly recommended.

Chemistry (B.A., B.S.)

The Chemistry major builds on a base of chemistry, physics, mathematics, and computer science to provide the student the opportunity to develop essential theoretical and practical skills in the subdisciplines of organic, physical, inorganic, analytical, and macromolecular chemistry. Typically, the practice of chemistry in industry deals with the synthesis, analysis, and control of the many materials used in our technological society.

The Chemistry program at U.T. Dallas is designed to instruct the student in how chemical experiments are performed, how results are interpreted, and through its integrated laboratory sequence, to emphasize the importance of one subdiscipline in solving problems inherent to another. Meeting these goals, the Chemistry program provides the student with the flexibility to enter industry, go on to graduate school, or pursue medical, dental, and other degrees in the health sciences.

Faculty
Robert A. Welch Chair in Chemistry; Professor of Chemistry: Ray H. Baughman
Cecil and Ida Green Distinguished Chair in Systems Biology; Professor of Chemistry: A. Dean Sherry
Cecil and Ida Green Chair in Systems Biology; Professor of Chemistry: John P. Ferraris
Professors: Kenneth J. Balkus, Jr., Rockford K. Draper (Biology), Bruce E. Gnade (Electrical Engineering)
Associate Professors: Michael C. Biewer, Gregg R. Dieckmann, Warren J. Goux, Inga H. Musselman, Paul Pantano, John W. Sibert IV
Assistant Professors: Jung-Mo Ahn, Steven Nielsen
Affiliated Professors: Lee A. Bulla (Biology), Anvar A. Zakhidov (Physics)
Research Professors: Gary E. Kiefer, Duck Joo Yang
Emeritus Professor: Richard A. Caldwell
Senior Lecturers: Sergio Cortes, Sandhya R. Gavva

Degrees
The Chemistry major may choose a program leading either to the B.A. or B.S. degree. The latter degree sequence has been approved by the American Chemical Society’s Committee on Professional Training.

B.A. Program
The B.A. program offers the minimum fundamental knowledge required for adequate professional function in a career in chemistry. It is possible that students choosing this option may, through suitable use of unspecified hours, prepare for careers in areas as varied as chemistry-related businesses, government, medicine and dentistry, secondary school teaching, and even law or politics.

B.S. Program
The B.S. program provides more intensive training in chemistry for the student who intends either to obtain employment at the bachelor’s level in the chemical industry or to pursue graduate study.

Bachelor of Arts or Bachelor of Science in Chemistry
Degree Requirements (B.S. 122 hours; B.A. 121 hours)

I. Core Curriculum Requirements: 42 hours
   A. Communication (6 hours)
      3 hours Communication (RHET 1302)
      3 hours Communication Elective (NATS 4310 or CHEM 4390)  
   B. Social and Behavioral Sciences (15 hours)
      6 hours Government (GOVT 2301 and 2302)
      6 hours American History
      3 hours Social and Behavioral Sciences Elective
   C. Humanities and Fine Arts (6 hours)
      3 hours Fine Arts (ARTS 1301)
      3 hours Humanities (HUMA 1301)
   D. Mathematics and Quantitative Reasoning (6 hours)
      6 hours Calculus (MATH 2417 and 2419)  
   E. Science (9 hours)
      Introductory Chemistry (CHEM 1311/1111, 1312/1112, and 2401)  

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: B.S. 57 hours; B.A. 56 hours
    Major Preparatory Courses (29 hours beyond the Core Curriculum)
    CHEM 1111 General Chemistry Laboratory I  
    or CHEM 1115 Honors Freshman Chemistry Laboratory I  
    CHEM 1112 General Chemistry Laboratory II  
    or CHEM 1116 Honors Freshman Chemistry Laboratory II  
    CHEM 1311 General Chemistry I  
    or CHEM 1315 Honors Freshman Chemistry I  
    CHEM 1312 General Chemistry II  


or CHEM 1316 Honors Freshman Chemistry II 2, 3
CHEM 2123 Introductory Organic Chemistry Laboratory I *
CHEM 2125 Introductory Organic Chemistry Laboratory II *
CHEM 2323 Introductory Organic Chemistry I *
CHEM 2325 Introductory Organic Chemistry II *
CHEM 2401 Introductory Quantitative Methods in Chemistry 2, 3
MATH 2417 Calculus I 1, 3
MATH 2418 Linear Algebra
or STAT 3332 Statistics for Life Sciences
MATH 2419 Calculus II
MATH 2451 Multivariable Calculus with Applications
PHYS 2125 Physics Laboratory I
PHYS 2126 Physics Laboratory II
PHYS 2325 Mechanics
PHYS 2326 Electromagnetism and Waves

Major Core Courses (12 hours)
CHEM 3321 Physical Chemistry I
CHEM 3471 Advanced Chemical Synthesis Laboratory
CHEM 3472 Instrumental Analysis

Major Related Courses (B.S. 22 hours; B.A. 21 hours)
Bachelor of Arts (18 hours beyond the Core Curriculum)
BIOL/CHEM 3361 Biochemistry I
or CHEM 4335 Polymer Chemistry
CHEM 3341 Inorganic Chemistry I
or CHEM 3322 Physical Chemistry II
Guided Electives - 12 credit hours; may be used in (partial) fulfillment of a Second Major, Minor or Teaching Certificate
Advanced Writing NATS 4310 Advanced Writing in the Natural Sciences and Mathematics 2

Bachelor of Science (19 hours beyond the Core Curriculum)
CHEM 3322 Physical Chemistry II
CHEM 3341 Inorganic Chemistry I
BIOL/CHEM 3361 Biochemistry I
CHEM 4473 Physical Measurements Laboratory
CHEM 4390 Research and Advanced Writing in Chemistry 2, 4
or CHEM 4399 Research and Advanced Writing in Chemistry for Honors Students 2, 4
CHEM 4V91 (3 hours) Research in Chemistry 4
CHEM 3362 Biochemistry II
or CHEM 4335 Polymer Chemistry
or CHEM 4355 Computational Modeling

2 A required Major course that also fulfills Core Curriculum requirements. If hours are counted in the Core Curriculum, students must complete additional coursework to meet the minimum requirement for graduation. Course selection assistance is available from the undergraduate advisor.
3 Hours above the Core Curriculum requirement are counted as part of the Major Preparatory Courses.
4 Research in Chemistry (CHEM 4V91), Research and Advanced Writing in Chemistry (CHEM 4390), and Research and Advanced Writing in Chemistry for Honors Students (CHEM 4399) are better defined as a project than a course and constitute an important part of the B. S. degree. The student conducts original research under the supervision of a faculty member, then must submit a research report which is defended orally. Normally this project will span two or more semesters. A complete set of guidelines is available from the undergraduate advisor.
* Indicates a prerequisite class to be completed before enrolling for upper division classes.

III. Elective Requirements: 18 hours
Advanced Electives (6 hours)
These courses must be outside the major and be upper-division and/or have prerequisites.
Free Electives (12 hours)
The plan must include sufficient upper-division credit to total 51 upper-division credit hours.
Minor in Chemistry

18 hours that must include
- BIOL 3161 Biochemistry Workshop I
- BIOL/CHEM 3361 Biochemistry I
- CHEM 3321 Physical Chemistry I
- CHEM 3472 Instrumental Analysis

Fast Track Baccalaureate/Master’s Degrees

Undergraduate students at U.T. Dallas with strong academic records who intend to pursue the M.S. in Chemistry at U.T. Dallas may apply for a Fast Track plan of study which involves taking selected graduate courses as an upper-level student. After admission to the graduate program, 15 hours of graduate courses with an earned grade of B or better can be used toward completion of the baccalaureate degree and to satisfy requirements for the master’s degree. Interested students should contact the undergraduate advisor well in advance of the junior year to prepare a sequence permitting maximal advantage to be taken of the catalog’s regulations (see page 30) regarding Undergraduate Registration for Graduate Courses.

Geosciences (B.A., B.S.)

Attaining greater understanding of past and present Earth processes is the fundamental goal of geosciences. To achieve this goal the geoscientist studies the minerals, rocks, fluids, and fossils of the Earth and investigates the physical, chemical, and biological processes occurring on and in the Earth.

Professional opportunities in geology exist in the environmental, energy, and mineral resources industries and in government agencies concerned with these fields. In addition, many occupations concerned with law, management, economics, and the environment utilize a background in geosciences.

Specific degree plans will be formulated by the undergraduate advisor in Geosciences. Changing circumstances may require changes to the degree plans.

Faculty

Professors: Carlos L. V. Aiken, William I. Manton, George A. McMeehan, Robert J. Stern
Associate Professors: Thomas H. Brikowski, John F. Ferguson
Professor Emeritus: David E. Dunn, Emile A. Pessagno, Dean C. Presnall, Robert H. Rutford
Senior Lecturer: Ingacio Pujana

Bachelor of Arts in Geosciences*

Degree Requirements (120 hours)

I. Core Curriculum Requirements:\[2\] 42 hours
A. Communication (6 hours)
   - 3 hours Communication (RHET 1302)
   - 3 hours Communication Elective (GEOS 4390 or NATS 4310)\[2\]
B. Social and Behavioral Sciences (15 hours)
   - 6 hours Government (GOVT 2301 and 2302)
   - 6 hours American History
   - 3 hours Social and Behavioral Sciences Elective
C. Humanities and Fine Arts (6 hours)
   - 3 hours Fine Arts (ARTS 1301)
   - 3 hours Humanities (HUMA 1301)
D. Mathematics and Quantitative Reasoning (6 hours)
   - 6 hours College Mathematics
E. Science (9 hours)
   8 hours of Chemistry, Biology or Physics, including laboratory component
   1 hour Geosciences Laboratory (GEOS 1103 Physical Geology Laboratory)

II. Major Requirements: 50 hours
   Major Preparatory Courses (15 hours)
   GEOS 1104 History of Earth and Life Laboratory*
   GEOS 1303 Physical Geology*
   GEOS 1304 History of Earth and Life*
   GEOS 2406 Geospatial Science and Methods
   GEOS 2409 Rocks and Minerals*
   Major Core Courses (8 hours)
   GEOS 3421 Stratigraphy and Sedimentology
   GEOS 3434 Paleobiology
   Major Related Courses (27 hours)
   Geosciences electives (15 hours)
   Science electives (12 hours)
   Advanced Writing (3 hours)
   GEOS 4390 Senior Research and Advanced Writing ²
   NATS 4310² Advanced Writing in the Natural Sciences and Mathematics

¹ Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.
² A Major requirement that also fulfills a Core Curriculum requirement. If hours are counted in the Core Curriculum, students must complete additional coursework to meet the minimum requirements for graduation. Course selection assistance is available from the undergraduate advisor.

III. Elective Requirements: 28 hours
   Advanced Electives (6 hours)
   All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.
   Free Electives (22 hours)
   Both lower- and upper-division courses may count as electives, but students must complete at least 51 hours of upper-division credit to qualify for graduation.

* Must be taken in conjunction with a second major.

Bachelor of Science in Geosciences
Degree Requirements (120 hours)

I. Core Curriculum Requirements¹: 49 hours
   A. Communication (6 hours)
      3 hours Communication (RHET 1302)
      3 hours Communication Elective (GEOS 4390, GEOS 4399 or NATS 4310)²
   B. Social and Behavioral Sciences (15 hours)
      6 hours Government (GOVT 2301 and 2302)
      6 hours American History
      3 hours Social and Behavioral Sciences Elective
   C. Humanities and Fine Arts (6 hours)
      3 hours Fine Arts (ARTS 1301)
      3 hours Humanities (HUMA 1301)
   D. Mathematics and Quantitative Reasoning (6 hours; 2 hours extra may be counted as free electives)
      Calculus (MATH 2417 and 2419)
   E. Science (9 hours)
      8 hours Chemistry (CHEM 1311, 1111, 1312, 1112)
8 hour Physics (PHYS 2125, 2126, 2325 and 2326)

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parentheses are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

2 A Major requirement that also fulfills a Core Curriculum requirement. If hours are counted in the Core Curriculum, students must complete additional coursework to meet the minimum requirements for graduation. Course selection assistance is available from the undergraduate advisor.

II. Major Requirements: 60 hours
A. Major Preparatory Courses (12 hours beyond Core Curriculum)
Pre-requisite courses to be completed before enrolling in upper-division GEOS courses.
GEOS 1103 Physical Geology Laboratory*
GEOS 1104 History of Earth and Life Laboratory*
GEOS 1303 Physical Geology*
GEOS 1304 History of Earth and Life*
GEOS 2409 Rocks and Minerals*

B. Major Core Courses (39 hours)
GEOS 2406 Geospatial Science and Methods
GEOS 3421 Stratigraphy and Sedimentology
GEOS 3470 Structural Geology
GEOS 4606 Field Geology (Summer Field Camp)
Geology Option (21-22 hours)
GEOS 3434 Paleobiology
GEOS 3464 Igneous and Metamorphic Petrography
GEOS 4320 The Physics and Chemistry of the Solid Earth
GEOS 4322 The Earth System
GEOS 4430 Hydrogeology and Aqueous Geochemistry
A mathematics course selected from:
GEOS 5306 Data Analysis for Geoscientists (with permission)
MATH 2418 Linear Algebra
MATH 2451 Multivariable Calculus with Applications
MATH 4332 Scientific Math Computing

Geophysics Option (24 hours)
MATH 2420 Differential Equations with Applications
MATH 2451 Multivariable Calculus with Applications
MATH 4332 Scientific Math Computing
MATH 4362 Partial Differential Equations
PHYS 3311 Theoretical Physics
PHYS 3312 Classical Mechanics
PHYS 3416 Electricity and Magnetism

III. Elective Requirements: 21 hours
A. Advanced Electives (6 hours)
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.

B. Free Electives (15 hours)
Both lower- and upper-division courses may count as electives, but students must complete at least 51 hours of upper-division credit to qualify for graduation. Students are strongly encouraged to take GEOS graduate courses as free electives.

Fast Track Baccalaureate/Master’s Degrees
The Fast-Track program allows students with strong academic records to take selected graduate courses that may be applied toward the baccalaureate degree and be used to satisfy requirements for the master’s degree. Interested students who intend to pursue a master’s degree in Geosciences may apply for a Fast Track baccalaureate/master’s plan of study via the Geosciences graduate advisor. The planned coursework must be coordinated with the Geosciences undergraduate advisor; the Geosciences graduate advisor should also be notified. A maximum of 15 credit hours may be applied under this program.
**Geosciences Minor**

Students not majoring in Geosciences are encouraged to choose Geosciences as a minor.

Lower-division courses (8 hours):
- GEOS 1103 Physical Geology Laboratory *
- GEOS 1104 History of Earth and Life Laboratory*
- GEOS 1303 Physical Geology *
- GEOS 1304 History of Earth and Life *

Upper-division courses (12 hours): To be selected in consultation with Geosciences Undergraduate advisor

*A prerequisite course to be completed before enrolling in upper-division GEOS core courses (GEOS 3421, 3434, 3464, 3470, 4320, 4322, 4430 and 4606).

**Mathematical Sciences (B.S.)**

Mathematics is both a profession and an indispensable tool for many types of work. As a tool, mathematics is a universal language which has been crucial in formulating and expressing ideas not only in science and engineering, but also in many other areas such as business and the social sciences. As probably the oldest and most basic science, it provides the key to understanding the major technological achievements of our time.

Of equal importance, knowledge of mathematics may help provide a student with the type of uncompromising and clear-sighted thinking useful in considering the problems of many other disciplines. The Mathematical Sciences degree program encompasses mathematics, statistics, and applied mathematics.

Applied mathematics and statistics continue to enjoy a rapid growth. Students have the opportunity of applying their expertise to any of a number of fields of application. For the student to be more effective in such applications, Mathematical Sciences also offers degree programs allowing additional emphasis in the areas of actuarial science, computer science, electrical engineering, and management.

Those interested in obtaining both a B.S. in Mathematical Sciences and Teacher Certification in the state of Texas should consult the Office of Teacher Education for specific requirements as soon as possible after formal admission to the University. See the Teacher Education section of this catalog for additional information.

The Mathematical Sciences degree program also prepares students for graduate studies. An accelerated B.S./M.S. Fast-Track program is available which provides the opportunity for undergraduate students to satisfy some of the requirements of the master’s degree while they are completing the bachelor’s degree in Mathematical Sciences.

**Faculty**

Professors: Larry P. Ammann, Michael I. Baron, Sam Efromovich, M. Ali Hooshyar, Patrick L. Odell (Emeritus), Istvan Ozsvath, Viswanath Ramakrishna, Ivor Robinson (Emeritus), Robert Serfling, Janos Turi, John W. Van Ness (Emeritus), John Wiorkowski

Assistant Professor: Yan Cao, Pankaj Choudhary, Mieczyslaw Dabkowski

Affiliated Faculty: Herve Abdi (BBS), Titu Andreescu, Alain Bensoussan (SOM), Thomas Butts (SME), Raimond Ober (EE)


**The Programs in Mathematical Sciences**

Students seeking a degree in the Mathematical Sciences may specialize in Mathematics, Statistics, or Applied Mathematics, and receive a B.S. degree in these areas. Each specialization allows some flexibility in electives so that students can better adapt their degree plans to their educational goals.

Mathematics: For students interested in a career in mathematics and for students interested in continuing on to graduate work in mathematics, applied mathematics, math education, and related areas.
Statistics: For students interested in probability and statistical models and their use in data analysis and decision making and for students interested in continuing on to graduate work in statistics, biostatistics, actuarial science, and other statistics-related areas.

Applied Mathematics: For students interested in mathematics for the purpose of using it broadly in various areas of application and for students interested in continuing on to graduate work in applied mathematics and related areas.

Fast Track Baccalaureate/Master’s Degrees

For students interested in pursuing graduate studies in Mathematical Sciences, the Mathematics Department offers an accelerated B.S./M.S. Fast Track that involves taking graduate courses instead of several advanced undergraduate courses. Acceptance into the Fast Track is based on the student’s attaining a GPA of at least 3.20 in all mathematics classes and being within 30 hours of graduation. Fast Track students may, during their senior year, take 15 graduate hours which may be used to complete the baccalaureate degree. After admission to the graduate program, these 15 graduate hours may also satisfy requirements for the master’s degree. Fast Track programs are offered in math, applied math, and statistics.

Bachelor of Science in Mathematical Sciences

Degree Requirements (120 hours)

I. Core Curriculum Requirements: 42 hours
A. Communication (6 hours)
   3 hours Communication (RHET 1302)
   3 hours Communication Elective (NATS 4310, or MATH 4390 or MATH 4398)²
B. Social and Behavioral Sciences (15 hours)
   6 hours Government (GOVT 2301 and 2302)
   6 hours American History
   3 hours Social and Behavioral Sciences Elective
C. Humanities and Fine Arts (6 hours)
   3 hours Fine Arts (ARTS 1301)
   3 hours Humanities (HUMA 1301)
D. Mathematics and Quantitative Reasoning (6 hours)
   6 hours Calculus (MATH 2417 and 2419)³
E. Science (9 hours)
   Math/Applied Math Options
   PHYS 2125 Physics Laboratory I
   PHYS 2126 Physics Laboratory II
   PHYS 2325 Mechanics
   or PHYS 2421 Honors Physics I - Mechanics and Heat
   PHYS 2326 Electromagnetism and Waves
   or PHYS 2422 Honors Physics II - Electromagnetism and Waves
   And an additional acceptable science course
   Statistics Option
   PHYS 2325/2125 Mechanics with Laboratory and PHYS 2326/2126 Electromagnetism and Waves with Laboratory
   or PHYS 2421 Honors Physics I - Mechanics and Heat with Laboratory and PHYS 2422 Honors Physics II - Electromagnetism and Waves with Laboratory
   or CHEM 1311/1111 and 1312/1112 General Chemistry I and II with Laboratory
   And an additional acceptable science course

¹ Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: 48 hours
Major Preparatory Courses (15 hours)
   CS 1337* Computer Science I
   MATH 2417 Calculus I³
MATH 2418∗ Linear Algebra
MATH 2419 Calculus II
MATH 2420∗ Differential Equations with Applications
MATH 2451∗ Multivariable Calculus with Applications

Major Core Courses (21 hours)
MATH 3310 Theoretical Concepts of Calculus
MATH 3311 Abstract Algebra I
MATH 3379 Complex Variables
MATH 4301 Mathematical Analysis I
MATH 4302 Mathematical Analysis II
MATH 4334 Numerical Analysis
NATS 4310 Advanced Writing in the Natural Sciences and Mathematics
STAT 4351 Probability

Major Related Courses (12 hours)

Applied Math Specialization
MATH 4341 Topology
MATH 4355 Methods of Applied Mathematics
MATH 4362 Partial Differential Equations
STAT 4382 Stochastic Processes

Mathematics Specialization
MATH 3312 Abstract Algebra II
MATH 3321 Geometry
MATH 4341 Topology
3 hours upper-division guided elective

Statistics Specialization
STAT 3355 Data Analysis for Statisticians and Actuaries
STAT 4352 Mathematical Statistics
STAT 4382 Stochastic Processes
3 hour upper-division guided elective

2 A Major course requirement that also fulfills a Core Curriculum requirement. If hours are counted in the Core Curriculum, students must complete additional coursework to meet the minimum requirements for graduation. Course selection assistance is available from the undergraduate advisor.

3 Two hours of Calculus are counted as electives; six hours are counted in Core Curriculum.

4 Approval of Mathematical Science department advisor required.

∗ Indicates a prerequisite class to be completed before enrolling in upper-division classes.

III. Elective Requirements: 30 hours

Advanced Electives (6 hours)
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.

Free Electives (24 hours)
Both lower- and upper-division courses may count as electives, but the student must complete at least 51 hours of upper-division credit to qualify for graduation.

Mathematical Sciences Programs with Actuarial Science Emphasis

Statistics Specialization together with following courses:
AIM 2301 Introductory Financial Accounting
BA 3341 Business Finance
BA 3351 Introduction to Management Information Systems
BA 4345 Financial Markets and Institutions
BA 4346 Investment Management
STAT 4372 Actuarial Science
And any two of the following courses:
AIM 2302 Introductory Management Accounting
AIM 3331 Intermediate Financial Accounting
BA 4347 Applied Corporate Finance
ECON 4330 Law and Economics

Notes: AIM 2301 must be taken before BA 3341, 4345, 4346 and 4347.
MATH 1325 or MATH 2417 relates to Exam 100 of Society of Actuaries (SOA) and Exam 1A of the Casualty Actuarial Society (CAS) and MATH 4334 relates to Exam 135 of SOA.
STAT 4351 and STAT 4352 relate to Exam 110 of SOA and Exam 1B of CAS. STAT 3355 and STAT 4382 relate to Exam 120 of SOA and Exams 3F, 3G, 4A, 4B, 4C of CAS. STAT 4372 relates to Exams 3E, 3H and the rest of Exam 4 of CAS and Exam 150 of SOA.

Mathematical Sciences Programs with Computer Science Emphasis

Applied Mathematics Specialization or Statistics Specialization together with following courses:
- CS 2305 Discrete Mathematics for Computing I
- CS 2336 Computer Science II
- CS 3305 Discrete Mathematics for Computing II
- CS 3335 C and C++
- CS 3345 Data Structures and Introduction to Algorithmic Analysis
- CS 4337 Organization of Programming Languages
- CS 3340 Computer Architecture

Mathematical Sciences Programs with Electrical Engineering Emphasis

Applied Mathematics Specialization or Statistics Specialization together with following courses:
- EE 3101 Electrical Network Analysis Laboratory
- EE 3111 Electronic Circuits Laboratory
- EE 3120 Digital Circuits Laboratory
- EE 3301 Electrical Network Analysis
- EE 3311 Electronic Circuits
- EE 3320 Digital Circuits
- EE 4301 Electromagnetic Engineering I

Mathematical Sciences Programs with Management Emphasis

Mathematics Specialization, Applied Mathematics Specialization or Statistics Specialization together with following courses:
- AIM 2301 Introductory Financial Accounting
- AIM 2302 Introductory Management Accounting
- BA 2301 Business and Public Law
- BA 3341 Business Finance
- BA 3351 Introduction to Management Information Systems
- BA 3361 Organizational Behavior

NOTE: Students transferring into Mathematical Sciences at the upper division level are expected to have completed all of the 1000- and 2000- level mathematics core course requirements.

Minor in Mathematical Sciences

Students not majoring in Mathematical Sciences may obtain a minor in Mathematics or Statistics by satisfying the following requirements:

18 credit hours of mathematics or statistics, 12 hours of which must be chosen from the following courses:
- Mathematics Minor: MATH 3310, MATH 4334 and two more upper-division mathematics courses that satisfy degree requirements by students in Mathematical Sciences.
- Statistics Minor: STAT 4351, STAT 4352 and two more upper-division mathematics courses that satisfy degree requirements by students in Mathematical Sciences.
Physics (B.A., B.S.)

The science of physics seeks understanding of the behavior of matter and energy at the most general and fundamental level. The physicist is trained to explore the physical universe in which people live and seeks interpretations of the natural phenomena found there. While much is known about the physical universe, many phenomena still remain to be investigated, understood, and exploited to the ultimate benefit of humankind. This is the challenge that a modern physicist faces.

Faculty

Cecil and Ida Green Chair in Physics: Roderick A. Heelis
Distinguished Chair in Physics: Myron B. Salamon
Green Distinguished Chair in Academic Leadership: Bryan Hobson Wildenthal
Associate Professors: Phillip Anderson, Kyeongiae Cho, Yuri Gartstein
Assistant Professors: Mustapha Ishak-Boushaki, Anton Malko
Senior Lecturers: Paul MacAlevey, Beatrice Rasmussen
Affiliated Faculty: Cyrus D. Cantrell (Engineering), John Ferraris (Chemistry), Wenchuang Hu (Engineering), Stephen Levene (Biology), Dean Sherry (Chemistry), Mary Urquhart (Science/Math Ed.), Duck-Joo Yang (Chemistry)

The Degrees

The student majoring in Physics must meet the general university requirements for admission and for the specific degree the student is seeking. The Physics Program offers both the Bachelor of Arts and the Bachelor of Science degrees.

Bachelor of Science

The Bachelor of Science is intended for students interested in a professional career in physics or closely related fields. Fifty-six hours of physics, eight hours of chemistry and 16 hours of mathematics are included in the 122 credit hours required for the degree.

Bachelor of Arts

The Bachelor of Arts program provides an opportunity for a strong base in physics for students wishing to pursue graduate studies (non-physics) in, for example, medicine, business administration, biophysics, oceanography, and patent or high technology law. Additionally, students seeking certification as high school teachers with physics as a major specialization and those seeking employment in industry, government service, and computer technology have the opportunity to obtain the necessary physics background through this program. The lower-division course requirements for the B.A. degree are the same as those for the B.S. degree. At the upper-division level, 26 hours of physics and 15 hours of science electives are required, making a total of 122 credit hours.

Graduate Studies Track

The recommended course of study toward a Bachelor of Science degree for those students who intend to pursue graduate studies in Physics begins with a two-semester Honors sequence of fundamentals of physics that gives the student a more extensive foundation in basic physics. The remainder of the program is the same as the regular B.S. program. A total of 122 credit hours is required.

Algebra Based Physics

An algebra based general physics course (PHYS 1301, 1302) with lab (PHYS 1101, 1102) is offered for students interested in the health sciences and those curious about the physical world in which we live. It stresses understanding the workings of nature and the physical processes and phenomena occurring therein.
Minor in Physics (20 hours)
A minor is offered that consists of PHYS 2325/2125 and 2326/2126, 3311, 3352 and two other upper-division physics courses.

Fast Track Baccalaureate/Master’s Degrees
For students interested in pursuing graduate studies in physics, the Physics Department offers an accelerated B.S. /M.S. Fast Track that involves taking graduate courses in lieu of several advanced undergraduate courses. Acceptance into the Fast Track is based on the student’s attaining a GPA of at least 3.00 on a minimum of 30 hours of upper-division courses that include PHYS 3311, 3312, 3330, 3416 and 3352. Eligible students may take up to 15 credit hours of selected graduate courses that may be used to complete the baccalaureate degree and also satisfy requirements for the master’s degree. These credits will partially satisfy the M.S. degree requirements when the student completes the B.S. degree. Interested students should contact their advisor during their junior year to apply to the Fast Track program.

Bachelor of Arts in Physics
Degree Requirements (122-124 hours)

I. Core Curriculum Requirements¹: 42 hours
   A. Communication (6 hours)
      3 hours Communication (RHET 1302)
      3 hours Communication Elective (NATS 4310, PHYS 4390 or PHYS 4399)
   B. Social and Behavioral Sciences (15 hours)
      6 hours Government (GOVT 2301 and 2302)
      6 hours American History
      3 hours Social and Behavioral Sciences Elective
   C. Humanities and Fine Arts (6 hours)
      3 hours Fine Arts (ARTS 1301)
      3 hours Humanities (HUMA 1301)
   D. Mathematics and Quantitative Reasoning (6 hours)
      6 hours Calculus (MATH 2417 and 2419)³
   E. Science (9 hours)
      8 hours Chemistry (CHEM 1311/1111, 1312/1112)³
      1 hour Physics (PHYS 2125)³

¹ Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: 62-64 hours
   Major Preparatory Courses (21-23 hours)
   MATH 2417 Calculus I²
   MATH 2419 Calculus II²
   MATH 2420 Differential Equations with Applications*  
   MATH 2451 Multivariable Calculus with Applications*
   PHYS 1100 Fun of Physics
   PHYS 2303 Contemporary Physics*
   PHYS 2325/2025/2125 Mechanics with Recitation/Laboratory*  
      or PHYS 2421/2125 Honors Physics I - Mechanics and Heat with Recitation/Laboratory*
   PHYS 2326/2026/2126 Electromagnetism and Waves with Recitation/Laboratory*  
      or PHYS 2422/2126 Honors Physics II - Electromagnetism and Waves with Recitation/Laboratory*
   Major Core Courses (26 hours)
   PHYS 3125 Electronics Laboratory
   PHYS 3311 Theoretical Physics
   PHYS 3312 Classical Mechanics
   PHYS 3325 Electronics
   PHYS 3330 Numerical Methods in Physics and Computational Techniques
PHYS 3352 Modern Physics I  
PHYS 3416 Electricity and Magnetism  
PHYS 4311 Thermodynamics and Statistical Mechanics  
PHYS 4373 Physical Measurements Laboratory  
Major Related Courses (15 hours)  
15 hours Science Electives  
Advanced Writing  
PHYS 4390 Senior Research and Advanced Writing  
or PHYS 4399 Senior Honors in Physics  
or NATS 4310 Advanced Writing in the Natural Sciences and Mathematics  
or Summer Research Project or COOP program with written final report  

2 Two hours of Calculus are counted as Major Preparatory credit; six hours are counted in Core Curriculum.  
3 Required preparatory coursework.  
4 Counted in Core Curriculum  
* Indicates a prerequisite class to be completed before enrolling for upper-division classes.  

III. Elective Requirements: 18 hours  
Advanced Electives (6 hours)  
All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.  
Free Electives (12 hours)  
Both lower- and upper-division courses may count as electives, but the student must complete at least 51 hours of upper-division credit to qualify for graduation.  
Physics Electives  
PHYS 3180 Observational Astronomy Laboratory I  
PHYS 3181 Observational Astronomy Laboratory II  
PHYS 3324 Scientific Computing  
PHYS 3380 Astronomy  
PHYS 4301 Quantum Mechanics I  
PHYS 4352 Modern Physics II  
PHYS 4371 Solid State Physics  
PHYS 4381 Space Science  
PHYS 4383 Plasma Physics  
Other Courses  
PHYS 1001 College Physics I Recitation  
PHYS 1002 College Physics II Recitation  
PHYS 1101 College Physics Laboratory I  
PHYS 1102 College Physics Laboratory II  
PHYS 1301 College Physics I  
PHYS 1302 College Physics II  
PHYS 3041 Physics for Bio Science I Recitation  
PHYS 3042 Physics for Bio Science II Recitation  
PHYS 3341 Physics for Bio Science I  
PHYS 3342 Physics for Bio Science II  

Bachelor of Science in Physics  
Degree Requirements (122 hours)  

I. Core Curriculum Requirements*: 42 hours  
A. Communication (6 hours)  
3 hours Communication (RHET 1302)  
3 hours Communication Elective (NATS 4310, PHYS 4390 or PHYS 4399)  
B. Social and Behavioral Sciences (15 hours)  
6 hours Government (GOVT 2301 and 2302)
School of Natural Sciences and Mathematics

6 hours American History
3 hours Social and Behavioral Sciences Elective

C. Humanities and Fine Arts (6 hours)
   3 hours Fine Arts (ARTS 1301)
   3 hours Humanities (HUMA 1301)

D. Mathematics and Quantitative Reasoning (6 hours)
   6 hours Calculus (MATH 2417 and 2419)

E. Science (9 hours)
   8 hours Chemistry (CHEM 1311/1111, 1312/1112)
   1 hour Physics (PHYS 2125)

1 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at U.T. Dallas.

II. Major Requirements: 62-64 hours

Major Preparatory Courses (21 hours)
- MATH 2417 Calculus I
- MATH 2419 Calculus II
- MATH 2420 Differential Equations with Applications*
- MATH 2451 Multivariable Calculus with Applications*
- PHYS 1100 The Fun of Physics
- PHYS 2303 Contemporary Physics*
- PHYS 2325/2025/2125 Mechanics with Recitation/Laboratory*
  or PHYS 2421/2125 Honors Physics I - Mechanics with Recitation/Laboratory*
- PHYS 2326/2026/2126 Electromagnetism and Waves with Recitation/Laboratory*
  or PHYS 2422/2126 Honors Physics II - Electromagnetism and Waves with Recitation/Laboratory*

Major Core Courses (26 hours)
- PHYS 3125 Electronics Laboratory
- PHYS 3311 Theoretical Physics
- PHYS 3312 Classical Mechanics
- PHYS 3325 Electronics
- PHYS 3330 Numerical Methods in Physics and Computational Techniques
- PHYS 3352 Modern Physics I
- PHYS 3416 Electricity and Magnetism
- PHYS 4311 Thermodynamics and Statistical Mechanics
- PHYS 4373 Physical Measurements Laboratory

Major Related Courses (15 hours)
- PHYS 4301 Quantum Mechanics I
- PHYS 4328 Optics
- PHYS 4352 Modern Physics II
- 6 hours Physics Electives
- Advanced Writing (fulfills 3 hours of Core Communications requirement)
  - PHYS 4390 Senior Research and Advanced Writing
    or PHYS 4399 Senior Honors in Physics
    or NATS 4310 Advanced Writing in the Natural Sciences and Mathematics
    or Summer Research Project or COOP program with written final report

2 Two hours of Calculus are counted as Major Preparatory credit; six hours are counted in Core Curriculum.
3 Required preparatory coursework.
4 Counted in Core Curriculum
* Indicates a prerequisite class to be completed before enrolling for upper-division classes.

III. Elective Requirements: 18 hours

Advanced Electives (6 hours)
- All students are required to take at least six hours of advanced electives outside their major field of study. These must be either upper-division classes or lower-division classes that have prerequisites.
Free Electives (12 hours)
Both lower- and upper-division courses may count as electives, but the student must complete at least 51 hours of upper-division credit to qualify for graduation.

Physics Electives
- PHYS 3180 Observational Astronomy Laboratory I
- PHYS 3181 Observational Astronomy Laboratory II
- PHYS 3324 Scientific Computing
- PHYS 3380 Astronomy
- PHYS 4302 Quantum Mechanics II
- PHYS 4371 Solid State Physics
- PHYS 4381 Space Science
- PHYS 4383 Plasma Physics
- PHYS 4V07 Senior Projects Laboratory

Other Courses
- PHYS 1001 College Physics I Recitation
- PHYS 1002 College Physics II Recitation
- PHYS 1101 College Physics Laboratory I
- PHYS 1102 College Physics Laboratory II
- PHYS 1301 College Physics I
- PHYS 1302 College Physics II
- PHYS 3041 Physics for Bio Science I Recitation
- PHYS 3042 Physics for Bio Science II Recitation
- PHYS 3341 Physics for Bio Science I
- PHYS 3342 Physics for Bio Science I
Teacher Education Certification Program

U.T. Dallas offers a rigorous university-based teacher certification curriculum and has built an outstanding reputation for producing excellent teachers.

Coursework and field experiences leading to teacher certification are planned and delivered through the U.T. Dallas Teacher Development Center (972-883-2730) in coordination with the other UTD academic programs that provide the content for the teaching fields. The Teacher Certification Program uses the total resources of the University rather than relying on a school of education. The State Board for Educator Certification (SBEC) and Texas Higher Education Coordinating Board have approved the content and procedures of these curricula.

Initial teaching certificates may be earned by UTD undergraduates, concurrently with their degree studies, or by graduates from this or other institutions. Additional teaching field(s) may be added to valid certificates presently held.

As of September 1, 1999, all Texas teaching credentials must be renewed every five years. SBEC (State Board for Educator Certification), working in conjunction with the Texas Education Agency and the Texas Higher Education Coordinating Board, has revised the rules governing educator preparation, shifting the process away from a prescribed schedule of required classes and semester hours to a standards-based system that identifies the knowledge and skills required for a beginning teacher in Texas. These standards are aligned with the Texas Essential Knowledge and Skills, the state’s required curriculum for public school students. Texas law requires persons seeking educator certification to perform satisfactorily on comprehensive examinations. The educator preparation program is required to determine the candidate’s eligibility to test. The SBEC web site (http://www.sbec.state.tx.us/) is the best source of up-dated information.

Certification Subject Areas

The following are subject areas in which The University of Texas at Dallas offers approved teaching fields leading to teacher certification.

Grades 8-12 Certification

Undergraduate students must have an academic major and a minimum of 24 semester hours of appropriate course work in the teaching field, a reading course in the content area, and 18 semester hours of professional education, including student teaching. All UTD student teacher candidates must have passed both state required examinations prior to being placed in a student teaching assignment. Certification for grades 8 - 12 is offered in the following fields:

- English Language Arts and Reading
- Social Studies
- Computer Science
- History
- Life Sciences
- Physical Sciences
- Science
- Mathematics

Grades 4-8 Certification

Undergraduate students must have an academic major with a minimum of 24 semester hours of appropriate coursework in the teaching field, two reading courses and 18 hours of professional education, including student teaching. In addition, candidates must pass state required TExES examinations for Pedagogy and Professional Responsibilities and content in the appropriate certification area prior to student teaching.

Certification fields for Grades 4-8:

- Science
- Mathematics
- Social Studies
- English Language Arts and Reading
Generalist – because this certificate qualifies a candidate to teach multiple subjects, additional academic course work is required in order to prepare the candidate for the rigorous, broad-based “Generalist 4-8” TExES examination.

Early Childhood – Grade 6 Certification

Generalist
The Generalist Certification is the only certification available for students interested in Early Childhood – Grade 6. The content related TExES for this certificate will test for a broad-based content mastery. Students are advised to work with advisors in the School of General Studies or the School of Behavioral and Brain Sciences if they seek degrees that lead to teaching certification in EC-Grade 6.

Undergraduate students need to consult with the appropriate academic program to design an undergraduate degree plan. All teacher certification candidates must register with the Teacher Development Center and take their upper-level professional development and education related course work and field experiences through the Center and the School of General Studies. It is the responsibility of the Teacher Development Center to assure that content and the professional development curricula meet the certification accountability requirements outlined in the Texas Education Code and monitored by the State Board for Educator Certification (SBEC).

All Teaching Fields
All undergraduate students must meet the 42-hour core curriculum for The University of Texas at Dallas. All candidates for certification at U.T. Dallas are required to pass 18 semester hours of appropriate professional development courses, including six semester credit hours of student teaching. In addition to the professional education courses, state requirements for courses in Reading are required for each certification level. Candidates must also demonstrate computer literacy, effective public speaking and complete twelve semester hours of English.

Admission
Upon admission to the University, undergraduate students should meet with an academic advisor in the major field to develop a degree plan, indicating to the advisor that the student is seeking teacher certification. Students must then apply for admission to the teacher education certification program, meet program GPA and THEA requirements, and complete a Certification Plan through the Teacher Development Center.

Post-Baccalaureate Program
Persons who already have baccalaureate degrees may seek teacher certification. They should consult with an advisor in the Teacher Development Center to develop a certification plan after they have been admitted to the university through the Office of Enrollment Services.

Post-Baccalaureate students must meet the 24 semester hour requirement in the appropriate teaching field. A certification plan will be developed based on an evaluation of the student’s transcript. When appropriate, students may take the required courses in their teaching field(s) at the graduate or undergraduate level. Post-Baccalaureate students must demonstrate computer literacy, effective public speaking, and complete 12 semester hours of English. All students must fulfill the U.T. Dallas requirement for student teaching or supervised internship.

Guidelines for Admission to The University of Texas at Dallas Teacher Certification Program
Guidelines are in compliance with Chapter 227 of the Texas Administrative Code and the HEA Title II accountability requirements.

Students seeking Texas teaching credentials at U.T. Dallas must meet the following requirements:
• Provisional Admission - Entitles a prospective student who has applied for admission to U.T. Dallas to be advised for a certification plan and/or to take the initial courses related to certification.
• GPA of 2.75 overall or on last 60 hours of coursework.
• Undergraduate students must have 54 semester hours of undergraduate coursework. This should include 12 semester hours at UTD with no grade below a “C”.
• Post-Baccalaureate students must have an undergraduate or graduate degree from an accredited university.
• TASP/THEA – Unless exempt, a candidate must pass the TASP/THEA with the following minimum scores: 260 in Reading, 240 in Math, and 240 in Writing.

Exemption from TASP/THEA: You are exempt from taking the TASP/THEA if you meet the qualifying standards on the GRE, GMAT, ACT, SAT, or exit-level TAKS.

  GRE: A minimum Verbal score of 450 and a minimum Quantitative score of 450 for a combined Verbal/Quantitative minimum score of 900.
  GMAT: A minimum combined score of 510 on the verbal and quantitative sections.
  ACT: A composite score of 26, and English and Math sub scores of at least 22. (Scores can be no more than five years old).
  SAT: Tests taken before September 1, 2005: A total score of at least 1100 with 550 minimums in the math and verbal sections of the test. After September 1, 2005: A total score of 1650 with 550 minimums in the math, critical reading, and writing sections of the test. (Scores can be no more than five years old).
  TAKS: Students with TAKS scores of 2200 in English/Language Arts and Math as well as a score of 3 in the writing sample (which is often not printed on your high school transcript, but can be found on the TAKS score report) are TSI/THEA exempt. TAKS scores can be no more than three years old.

Appropriate documentation is required to qualify for the exemptions from TASP/THEA. The Official TASP/THEA Test Study Guide may be purchased in the UTD Bookstore. TASP/THEA registration forms are available in the Teacher Development Center, Founders North 3.118 or through the Learning Resource Center in the McDermott Library at 972-883-6707.

• Undergraduate students should meet with a faculty advisor in their academic major to develop a degree plan, indicating to the advisor their interest in pursuing teacher certification. Students can then make an appointment for certification plan advising with the Teacher Development Center whenever they are ready to take upper division courses. Freshmen should not register for education courses.
• Post-Baccalaureate students interested in teacher certification at U.T. Dallas are advised in the Teacher Development Center.

Official Admission

• Meet all requirements for "Provisional Admission."
• Complete an application for admission to the Teacher Development Program. A committee of faculty, administrators, and public school educators will review all applications before students can proceed in the program.
• Complete American Public School (ED 3314) and Educational Psychology (ED/PSY 3339).
• Undergraduate students must successfully complete 12 semester hours of approved courses at U.T. Dallas. (Students must have met the requirements for Provisional Admission, completed American Public School (ED 3314), Educational Psychology (ED/PSY 3339), and have a 2.75 GPA before re-enrolling in Classroom Management, Methods and C&I courses.)

Texas Examinations of Educator Standards (TExES)

All candidates for initial teacher certification must pass two TExES certification examinations:

1. Pedagogy and Professional Responsibilities test at the appropriate level
2. Content specialization test.

Students must be officially admitted to the Teacher Development Program to take the TExES certification examinations. For information on TExES registration and eligibility, please review the Teacher Development Center web site — http://www.utdallas.edu/teach/ or contact the Teacher Development Center. TExES preparation manuals can be downloaded from the web at http://www.texes.ets.org/ or http://www.sbec.state.tx.us/. Students should access this information before or during the first semester of enrollment at UT Dallas. Students are encouraged to prepare early for the content related specialization TExES examination and
to take the PPR TEExES exam during or immediately after completing Classroom Management. Practice tests are available through the Teacher Development Center or the Texas Education Agency (TEA) website.

**Requirements for Student Teaching**

Applications for student teaching will be accepted at one of several information sessions held early in each long semester (before October 15 in the fall and before March 15 in the spring). For further information contact the Teacher Development Center.

A committee of faculty, administrators, and field placement educators will review all applications for supervised student teaching or Post-Baccalaureate internships. All candidates must have exhibited professional maturity, acceptable class attendance, and meet the following requirements.

- Adhere to the *Code of Ethics and Standard Practices for Texas Educators* as listed in Appendix III in the student teacher handbook
- Meet all requirements for official admission to the teacher certification program.
- Pass both required TEExES exams.
- Complete all required coursework in teaching field with a 2.75 minimum GPA.
- Have no grade lower than a “B” in Classroom Management, C&I or Methods courses.
- Have no grade lower than “C” in other required certification courses.
- Request a student teaching assignment where no family member works or attends.
- Clear district criminal background check.
- Register for student teaching (6 semester hours). A student teaching fee will be included in the total registration charges.
- Pay tuition expenses before beginning official student teaching assignment.

**U.T. Dallas Requirements for Teacher Certification**

- A 2.75 GPA in all professional education coursework and in content areas.
- Grade of “A” or “B” in Classroom Management, C&I or Methods courses.
- No grade lower than “C” in other required certification courses.
- Professional education coursework taken at U.T. Dallas.
- Computer literacy and effective public speaking demonstrated either by completion of appropriate coursework or a letter of competence.
- 12 semester hours of English with no grade lower than a “C”.
- 40 clock hours of early field experience.
- Grade of “A” or “B” in Student Teaching.

**Application for Certification**

Students who successfully fulfill all requirements for Texas teacher certification (GPA, course work, TASP/THEA and TEExES examinations, etc.) should apply for certification on the State Board for Educator Certification website (http://www.sbec.state.tx.us/). The Certification Officer will access student online applications and, upon verification of requirements, will make recommendations for certification online. Students will immediately receive an email from the certifying agency verifying recommendation. Official Certificates are mailed by the state agency within six weeks.

**Contact Information**

U.T. Dallas Teacher Development Center; Founders North Building FN 3.118; (972)883-2730 phone; (972)883-4330 fax; http://www.utdallas.edu/teach/.
Accounting and Information Management Course Descriptions

AIM 2300 Principles of Accounting (3 semester hours) This course will introduce students to accounting concepts and principles used to make decisions by business managers and investors. The course is designed to benefit all students who will be future users of accounting information. This course cannot be used to fulfill degree requirements by students in the School of Management. (3-0) Y

AIM 2301 (ACCT 2301) Introductory Financial Accounting (3 semester hours) An introduction to business financial reporting designed to create an awareness of the accounting concepts and principles for preparing the three basic financial statements: the income statement, balance sheet, and statement of cash flows. The course is designed to benefit all business students who will be future users of accounting information. (3-0) S

AIM 2302 (ACCT 2302) Introductory Management Accounting (3 semester hours) An introduction to the determination, development, and uses of internal accounting information needed by business management to satisfy customers while continuously controlling and containing costs. The course is designed to benefit all business students who will be future users of accounting information. (3-0) S

AIM 3311 Accounting Communications (3 semester hours) This course introduces students to various types of professional communication, both written and oral. Students practice skills in communication styles such as memos, email, research reports, proposals, presentations, and interviews. Students may receive credit for either AIM 3311 or BA 3311 to fulfill degree requirements. Prerequisites: BA 3351, MATH 1325 and RHET 1302. (Same as BA 3311) (3-0) S

AIM 3320 Financial Information Management (3 semester hours) This course is a study of the corporate financial reporting process and the use of financial statements by investors and analysts. Students use financial reports prepared by publicly-traded companies to study how financial statements and other information is prepared, communicated and used by managers, investors and other decision-makers. Prerequisite: AIM 2301. (3-0) S

AIM 3321 Managing Financial Data (3 semester hours) This course introduces database concepts in the context of financial information systems and the basic design and implementation of relational databases and database applications. It focuses on how relational databases can be used for managing financial data and illustrates the concepts using Access software. AIM 3321 and BA 4321 cannot both be used to satisfy degree requirements. Prerequisites: AIM 2301, AIM 2302, MATH 1325, and BA 3351. (Same as BA 4321) (3-0) Y

AIM 3322 Integrated Accounting Information Systems (3 semester hours) This course employs SAP software to illustrate the fundamental concepts of integrated information systems. Prerequisites: AIM 2301, AIM 2302, MATH 1326, and MATH 2333. (3-0) Y

AIM 3331 Intermediate Financial Accounting I (3 semester hours) A study of external financial reporting, including measuring and reporting of cash, receivables, inventories, property, plant and equipment, and intangibles. Financial statement presentation issues are analyzed to gain an appreciation for the impact of generally accepted accounting principles on business decisions. Prerequisites: AIM 2301, AIM 3320, MATH 1326, and MATH 2333. (3-0) S

AIM 3334 Auditing (3 semester hours) Basic concepts, philosophy, standards, procedures, and practices of auditing are presented. Topics include generally accepted auditing standards, the changing role of the independent auditor in society, professional conduct and ethics, auditor’s reporting responsibilities, risk assessment, internal control, fraud, evidential matter, and the computer in auditing in the global economy. Prerequisite: AIM 3331. (3-0) R
AIM 4336 Financial Statement Analysis (3 semester hours) Financial statements are analyzed from the user’s prospective. Broad concepts are illustrated with applications to different companies. Topics include comparative analysis, earnings management and ethics in financial reporting. Prerequisites: AIM 2301, AIM 2302, AIM 3320, MATH 1326, and MATH 2333. (3-0) Y

AIM 4337 Business Valuation (3 semester hours) Models used to value businesses and stocks are studied and applied. Topics include income measurement and profitability assessment, analysis of discounted cash flows and accounting-based valuation models. Prerequisites: AIM 2301, AIM 2302, AIM 3320, MATH 1326, and MATH 2333. (3-0) Y

AIM 4342 Analysis and Design of Accounting Systems (3 semester hours) Students are introduced to system analysis and design tools and methods. The course emphasizes business processes and enterprise resource planning systems. Prerequisites: AIM 2301, AIM 2302, MATH 1326, and MATH 2333. (3-0) S

AIM 4343 Accounting Information for Decision Analysis (3 semester hours) This course describes quantitative techniques used to characterize costs, benefits and risks and the use of accounting information for managerial decision making in technology settings. Advanced spreadsheet models are used to implement these techniques. Prerequisites: AIM 2301, AIM 2302, MATH 1326, and MATH 2333. (3-0) Y

AIM 4380 Internship in Accounting and Information Management (3 semester hours) This course provides students with an opportunity to expand and apply their skills in accounting and information management in a professional setting. The accounting and information management student will be required to apply knowledge obtained at the University in an actual job situation. (3-0) Y

**Special Topics**

**Accounting and Information Management**

AIM 4V00 Special Topics (1-3 semester hours) May be lecture, readings, or individualized study. Graded Credit/No Credit only unless instructor permits letter grade. May be repeated for credit as topics vary (9 hours maximum). ((1-3)-0) S

**American Studies Course Descriptions**

AMS 2341 American Studies for the Twenty-First Century (3 semester hours) An introduction to American cultural studies, its theories, and methodologies. Topics may include: religion and politics; transnationalism; gender and sexuality; class, labor and consumption; race and ethnicity. Develops students’ abilities to interpret cultural texts, to make and evaluate historical and literary arguments, and to situate contemporary cultural debates in larger historical and theoretical frames. (3-0) Y

AMS 2390 Topics in American Studies (3 semester hours) May be repeated for credit as topics vary (9 hours maximum). (3-0) R

AMS 3300 American Popular Culture (3 semester hours) Examines American culture from the colonial period to the present through some of its most popular cultural forms: fiction, film, magazines, advertising, music, sports, television and media. Considers the economics of cultural production, ways of critically reading popular texts, and how consumers make use of popular culture. Pays particular attention to the ways gender, race, and class influence how popular texts are created and consumed. (3-0) Y

AMS 3302 American Cultures (3 semester hours) Study of contemporary American cultures. Examines institutions, culture regions, and the interaction between mainstream American culture and various subcultures. (3-0) Y

AMS 3313 Public Relations (3 semester hours) Study of the techniques used by U.S. corporations, nonprofit organizations, and individuals to create and foster the public images they desire. (3-0) Y

AMS 3314 Public Communication (3 semester hours) Study of communication theory in relation to ways in which the U.S. government and other institutions present themselves. (3-0) Y

AMS 3316 Interpersonal Communication (3 semester hours) Study of theory and practice of interpersonal communication. The focus will be on learning and applying various concepts and skills needed to improve the quality and effectiveness of communication in both personal and professional aspects of life. (3-0) Y

AMS 3317 United States and the World Community (3 semester hours) An examination of the relationships among the United States, its sociocultural institutions, and the world community. Topics will include globalization, foreign relations, and national security issues. (3-0) R

AMS 3318 Contemporary American Conflicts (3 semester hours) An investigation of the core tensions and strains in contemporary American society and culture with emphasis on individual freedoms vs. social responsibility, pluralism, social inequality, gender, and poverty and prosperity. (3-0) R
AMS 3321 American Ethnic Experience: Immigrants Before 1945 (3 semester hours) Study of the experiences, conditions, and contributions of the old immigrants who came to America before 1945. The course examines the making of mainstream American culture, persistence of ethnic subcultures, and changes in ethnic relations. (3-0) R

AMS 3322 American Ethnic Experience: Immigrants After 1945 (3 semester hours) Study of the experiences, conditions, and contributions of the new immigrants who have arrived in America since 1945. Topics include the changes in immigration policies, new patterns of ethnic relations, and impact of new immigrants on American society. (3-0) T

AMS 3326 The U.S. in the 21st Century (3 semester hours) An exploration of 21st-century scenarios for the U.S. by studying the conditions and trends in the 1990s. The course examines the future roles of the U.S. in the world community. (3-0) T

AMS 3370 Organized Crime in America (3 semester hours) An examination of how the vast network of organized crime has become an ineradicable part of the nation's special fabric and how it alters the ways in which legitimate business is done. Emphasis is placed on understanding the phenomenon and its implications for American life. (3-0) Y

AMS 3374 Entrepreneurs in America (3 semester hours) An interdisciplinary introduction to various kinds of entrepreneurial ventures. The basic purpose of the course is to discover and understand the factors that govern the success (or failure) of entrepreneurial ventures and the role of the entrepreneur in a capitalist economy. (3-0) R

AMS 3384 North American Archaeology (3 semester hours) An introduction to archeological theories and evidence of the settlement of North America before European Contact. (3-0) T

AMS 3V05 Caribbean Archaeological Research Lab (1-6 semester hours) This course will give students an opportunity to conduct archaeological analysis of remains from the Indian Creek site in Antigua. May be repeated for credit (6 hours maximum). (1-6-0) R

AMS 4300 Oral and Written Communication for the Classroom (3 semester hours) This course provides future teachers with the ability to understand, use, and teach standard American English grammar rules and to employ effective speaking techniques as well as write efficacious sentences, paragraphs, and essays and make effective oral presentations. By becoming proficient in these areas, future teachers will know how to score student essays and deliver viable classroom instruction. (3-0) T

AMS 4303 Business, Law and Culture (3 semester hours) Study of the interactions among business, law and culture from an interdisciplinary perspective. The course examines business tangles, legal complexities, ethical dilemmas, and cultural contradictions in the capitalist system. (3-0) T

AMS 4304 Communication in America (3 semester hours) Examines the basic verbal and non-verbal elements affecting communication in American society. Perspectives to be addressed include communication across cultures, gender differences in communication, interpersonal communication styles, and communication peer groups, families, and work contexts. In addition, the effects of technology on communication and its impact on individuals and society will be explored. (3-0) T

AMS 4305 World History for Teachers (3 semester hours) This course is a comprehensive thematic survey of world history that parallels the standards in the Texas Essential Knowledge and Skills (TEKS) as required for teachers in grades 8 through 12. (3-0) T

AMS 4310 Terrorism and American Foreign Policy (3 semester hours) Explores in depth the ways in which critical areas of American foreign policy have been influenced by terrorist events often led by shadowy forces difficult to defend against. (3-0) Y

AMS 4378 Contemporary Studies of America (3 semester hours) Subject matter will vary from semester to semester with emphasis on America in the modern era. May be repeated for credit as topics vary (9 hours maximum). (3-0) Y

AMS 4379 Topics in American Studies (3 semester hours) Subject matter will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). (3-0) Y

AMS 4381 Senior Honors in American Studies (3 semester hours) Required for graduation magna cum laude or summa cum laude. Prerequisite: Completion of at least 39 and no more than 45 hours of work towards a degree in American Studies and consent of instructor. (3-0) S

AMS 4382 Global Economy (3 semester hours) Considers the changing relationships of population, resources, and the economy, the transformation of classical spatial economies, and the processes producing increasing globalization. Particular attention is paid to technological change and to the dynamics of world trade and investment. This course is also recommended for students who are not economics majors. (3-0) T

AMS 4383 Media Issues (3 semester hours) Investigates the impact and influence of the mass media on society today, using classical techniques of argument and evidence. Students engage in debate-styled discussions about topics, such as V-chip technology, TV talk shows, criminal trial news coverage, TV violence, and American values, among others. (3-0) T

AMS 4385 Professional Communications in Business (3 semester hours) Combines theory and practice in improving both the written and spoken word in business. Students learn to evaluate professional and technical audiences and how to communicate more effectively to those audiences. Principles of composition, organization, tone, format, and punctuation are reviewed. Exercises in effective speaking and group presentations are also conducted. (3-0) T

AMS 4V80 Independent Study (1-6 semester hours) Independent study under a faculty member’s direction. May be repeated for credit. Consent of instructor required. (1-6-0) S
Art and Performance Course Descriptions

AP 2335 The Creative Process (3 semester hours) Through discussions, readings, and media presentations of work by contemporary artists, thinkers, makers, and doers, students will begin to discover methods and approaches to the creative experience. This course may be taken only by majors other than Art and Performance and is intended for students without formal studio experience. (3-0) T

AP 2V71 Independent Study in Art and Performance (1-3 semester hours) Independent study under a faculty member’s direction. Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). Consent of instructor required. ((1-3) -0) R

AP 3300 Elements of Art and Performance (3 semester hours) An analysis of the elements of space, time, image, text, and gesture as they relate to art making in the various visual and performing arts. These elements will also serve as a starting point from which students will investigate notions of creativity, expression, and aesthetics in a workshop setting. Explorations into what constitutes a work of art, and ways in which a work of art can be perceived and interpreted. This course is a requirement for all AP majors and should be taken prior to completing the first 12 hours of upper-division course work. It is normally offered only during the fall and spring semesters. Prerequisite: ARTS 1301 or AHST 1303 or AHST 1304 or AHST 2331 or DANC 1310 or DRAM 1310 or FILM 2332 or MUSI 1306. (3-0) S

AP 3344 Topics in Performance (3 semester hours) Investigations of the changing structures and methods of performance in theatre, dance, music, film/video, and the visual arts. Students will explore the “idea of art” that resides in works which exhibit no singular stylistic attributes and which cut across the traditional boundaries among media. Consideration will be given to the changing role of contemporary criticism that includes analyses outside the formalist tradition: semiotics, Marxism, phenomenology, feminism, and post structuralism. May be repeated for credit as topics vary (9 hours maximum). Prerequisites: Upper-division standing, and completion of all lower-division requirements in AP and permission of the instructor. (3-0) R

AP 4370 Interdisciplinary Studies in Art and Performance (3 semester hours) Subject matter may vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). Prerequisites: Upper-division standing and completion of all lower-division requirements in AP and permission of the instructor. (3-0) R

AP 4399 Senior Honors in Art and Performance (3 semester hours) Intended for students conducting independent research for honors theses or projects. Signature of instructor on proposed project outline required. (3-0) R

AP 4V71 Independent Study in Art and Performance (1-3 semester hours) Independent study under a faculty member’s direction. Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). Prerequisites: Upper-division standing and completion of all lower-division requirements in AP. Consent of instructor required. ((1-3)-0) R

Interdisciplinary Studies Courses Applicable to the Major in Art and Performance
ISAH 4V88 Special Interdisciplinary Topics in the Arts and Humanities, as approved by the instructor and Associate Dean. R

Art History Course Descriptions

AHST 1303 (ARTS 1303) Survey of Western Art History: Ancient to Medieval (3 semester hours) An introduction to painting, sculpture, and architecture in the West from prehistory through the late Middle Ages and including the achievements of the ancient Egyptian, Greek, Roman, and Medieval cultures. Monuments will be studied within their historical, religious, and social contexts, with particular focus on the role of art in society and on the development of style. (3-0) Y

AHST 1304 (ARTS 1304) Survey of Western Art History: Renaissance to Modern (3 semester hours) An introduction to painting, sculpture, and architecture in the West from the Renaissance to the modern period, including work by such artists as Michelangelo, Rembrandt, the Impressionists, and Picasso. Artists and monuments will be studied within their historical, religious, and social contexts, with particular focus on the role of art in society and on the development of style. (3-0) Y

AHST 2331 Understanding Art (3 semester hours) An investigation into the nature of the visual arts with an emphasis on the issues and ideas that artists explore through their work and how these ideas translate into the artwork. Attention will be given to the interpretation or “reading” of the artwork and how it may relate to society. (3-0) Y

AHST 2390 Topics in Art History (3 semester hours) Subjects will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: AHST 1303, AHST 1304, AHST 2331, or ARTS 1301. (3-0) R

AHST 2V71 Independent Study in Art History (1-3 semester hours) Independent study under a faculty member’s direction. Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). ((1-3)-0) R
AHST 3315 The Art of the Renaissance (3 semester hours) Studies in the art and architecture of Italy and Northern Europe during the 14th, 15th, and 16th centuries. Special attention is paid to the role of patronage, the developing self-consciousness of the artist, and the importance of new techniques. Prerequisite: AHST 1303, AHST 1304, AHST 2331, or ARTS 1301. (3-0) T

AHST 3316 The Art of the Baroque (3 semester hours) Studies in the art and architecture of the 17th and 18th centuries in Europe. Emphasis is on the social and religious bases of the baroque styles and on the impact of certain artistic personalities, such as Bernini, Rubens, Velázquez, and Rembrandt. Prerequisite: AHST 1303, AHST 1304, AHST 2331, or ARTS 1301. (3-0) T

AHST 3317 Pioneers of Modern Art (3 semester hours) Focus on the work of the Post-Impressionists (Seurat, Gauguin, Van Gogh, and Cézanne) and the Symbolists with special emphasis on the artist's contribution to the discourse of ideas and the crisis of meaning in the late 19th century. Prerequisite: AHST 1303, AHST 1304, AHST 2331, or ARTS 1301. (3-0) T

AHST 3318 Contemporary Art (3 semester hours) An issue-oriented class in which a selection of recent developments in art serve to introduce the ideas and aims of postmodernism. Special attention is given to those artists who are concerned with representation and the visual element in social constructs. Prerequisite: AHST 1303, AHST 1304, AHST 2331, or ARTS 1301. (3-0) T

AHST 3319 Twentieth-Century European Art: Avant-Garde and Aftermath (3 semester hours) The situation of the European avant-garde before and after its explosive center point of World War I. Special emphasis will be given to the breakthrough of abstraction and modernism's problematic relation to tradition. Prerequisite: AHST 1303, AHST 1304, AHST 2331, or ARTS 1301. (3-0) R

AHST 3320 Art in Historical Context (3 semester hours) Studies in the arts and/or architecture of such eras as ancient Greece and Rome or the 18th and 19th centuries. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: AHST 1303, AHST 1304, AHST 2331, or ARTS 1301. (3-0) T

AHST 3324 History of Photography (3 semester hours) Photography, from 1825 to the present, as a study of evolving styles, stressing key turning points and contributing factors and focusing on a background of the modern art movement and the psychology and events of the times. Critical analysis of the work of various photographers will be included. Topics may include an emphasis on 19th century, modern, or contemporary photography. Prerequisite: AHST 1303, AHST 1304, AHST 2331, or ARTS 1301. (3-0) T

AHST 3336 Foundational Research in Art History (3 semester hours) Subjects will vary from semester to semester. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: AHST 1303, AHST 1304, AHST 2331, or ARTS 1301. (3-0) R

AHST 4V71 Independent Study in Art History (1-3 semester hours) Independent study under a faculty member's direction. Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). Prerequisites: Upper-division standing, and completion of all lower-division requirements in AP and permission of the instructor. (1-3-0) R

Arts Course Descriptions

ARTS 1301 (ARTS 1301) Exploration of the Arts (3 semester hours) This course introduces students to the physical and intellectual demands required of the author, the performer, and the visual artist. This introduction includes, but is not limited to, the student's production of a creative project as well as written assessments of art and performance. (3-0) Y

ARTS 1316 (ARTS 1316) Drawing Foundations (3 semester hours) This course provides a foundation for drawing and printmaking classes. Emphasis will be placed on the process of charcoal drawing in relation to design concerns such as light, space, form and composition. The importance of drawing as a method both to describe reality and to conceptualize ideas will be stressed. (0-3) Y

ARTS 2316 (ARTS 2316) Painting Foundations (3 semester hours) This course provides a foundation for painting classes. Emphasis will be placed on color theory and design as they relate to the process of painting. Lectures and discussions will address both the history of painting and current issues in contemporary art. This course will cover an introduction to the materials of painting, color mixing, and the preparation of painting surfaces. (0-3) Y

ARTS 2350 Digital Photography and Design (3 semester hours) Introduces students to digital photographic processes, including camera operation, image capture, lighting techniques, and digital workflow. Lectures and discussions will relate to both the history of visual art and current issues in contemporary art, photography, and design. (0-3) Y

ARTS 2380 (ARTS 1311) 2D Design Foundations (3 semester hours) This course provides a foundation for most 3000-level art courses. The course will introduce the problem of working with color and design, emphasizing either traditional studio or digital processes. Lectures and discussions will relate to both the history of visual art and current issues in contemporary art and design. (0-3) Y
ARTS 2381 (ARTS 1312) 3D Design Foundations (3 semester hours) This course provides a foundation for courses in sculpture and installation. Emphasis will be placed on working with the materials of sculpture. Concepts that are relevant to three-dimensional design, such as space, mass, and texture, will be presented in a context that relates to the history of sculpture as well as current issues in contemporary art and design. (0-3) T

ARTS 2V71 Independent Study in Visual Arts (1-3 semester hours) Independent study under a faculty member’s direction. Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). ([1-3]-0) R

ARTS 3311 Theory and Practice of Visual Arts (3 semester hours) This studio art course provides a context for the creation, discussion and critique of visual art. The course aims to fuse engagement in artistic production with reflection on theoretical and socio-cultural issues relevant to contemporary art practices. Prerequisite: ARTS 1316, ARTS 2316, ARTS 2350, ARTS 2380, or ARTS 2381. (0-3) T

ARTS 3340 Topics in Studio Art (3 semester hours) A study of fundamental principles and basic techniques of different media in the visual arts. Sections may be devoted exclusively to sculpture, photography, computer imaging, or painting. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: ARTS 1316, ARTS 2316, ARTS 2350, ARTS 2380, or ARTS 2381. (0-3) T

ARTS 3340 Topics in Studio Art (3 semester hours) A study of fundamental principles and basic techniques of different media in the visual arts. Sections may be devoted exclusively to sculpture, photography, computer imaging, or painting. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: ARTS 1316, ARTS 2316, ARTS 2350, ARTS 2380, or ARTS 2381. (0-3) T

ARTS 3363 Design (3 semester hours) Explores concepts and techniques in design including color theory, composition, and 2D- and 3D- design. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: ARTS 1316, ARTS 2316, ARTS 2350, ARTS 2380, or ARTS 2381. (0-3) T

ARTS 3365 Drawing (3 semester hours) An investigation of the principles and techniques involved in the drawing process. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: ARTS 1316, ARTS 2316, ARTS 2350, ARTS 2380, or ARTS 2381. (0-3) T

ARTS 3366 Mixed Media (3 semester hours) An investigation of the interaction and combination of several traditional visual media using techniques derived from 2D and 3D-dimensional studio arts. May be repeated for credit (6 hours maximum). Prerequisite: ARTS 1316, ARTS 2316, ARTS 2350, ARTS 2380, or ARTS 2381. (0-3) Y

ARTS 3369 Intermediate Painting (3 semester hours) Explores traditional and nontraditional concepts and techniques of painting and the development of style. Topics may include color theory, two-dimensional design, and the nature of representation. May be repeated for credit (6 hours maximum). Prerequisite: ARTS 2316 or permission of instructor. (0-3) Y

ARTS 3371 Black and White Photography (3 semester hours) Investigation of the photographic process and an examination of the various levels on which meaning is constructed, including selection of subject matter, concern for aesthetics, and socio-cultural context. Instruction in camera techniques will emphasize 35mm photography. Darkroom processes may include traditional or experimental photographic printing methods. May be repeated for credit (6 hours maximum). Prerequisite: ARTS 1316, ARTS 2350, ARTS 2380, or permission of instructor. (0-3) Y

ARTS 3372 Color Photography (3 semester hours) Investigation of the color photographic process from conceptual, aesthetic, and technical perspectives. Instruction in camera techniques will emphasize digital processes. May be repeated for credit (6 hours maximum). Prerequisite: ARTS 1316, ARTS 2350, ARTS 2380, or permission of instructor. May be repeated for credit (6 hours maximum). (0-3) Y

ARTS 3373 Printmaking (3 semester hours) Explores traditional and nontraditional techniques of printmaking through the various topics of screen printing, etching, woodcut, collagraph, or monoprint. May be repeated for credit (6 hours maximum). Prerequisite: ARTS 1316, ARTS 2316, ARTS 2380, or permission of instructor. (0-3) T

ARTS 3374 Technical Photography (3 semester hours) Introduces students to a variety of professional opportunities in photography and related fields through hands-on practice, workshops, demonstrations, and lectures. The course will emphasize technical aspects of photography such as studio and location lighting techniques, and will include discussion of fine art and commercial photography applications. May be repeated for credit (6 hours maximum). Prerequisite: ARTS 1316, ARTS 2350, ARTS 2380, or permission of instructor. (0-3) S

ARTS 3375 Sculpture (3 semester hours) Explores the traditional and nontraditional techniques of three-dimensional work in wood, clay, metal, plastics, fiber, stone. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: ARTS 1316, ARTS 2316, ARTS 2380, ARTS 2381, or permission of instructor. (0-3) Y

ARTS 3376 Time-Based Art (3 semester hours) Exploration of the conceptual demands inherent in the creation of time-based visual art. Topics may include computer animation, video processes, interactive visual arts, and the potential of narrative models. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: ARTS 1316, ARTS 2316, ARTS 2350, ARTS 2380, or ARTS 2381. (0-3) T

ARTS 3377 Digital Photography (3 semester hours) Explores digital photographic processes, with an emphasis on contemporary issues in art and technology. Course includes instruction in camera operation, lighting, image editing software, and output to web and print. May be repeated for credit (6 hours maximum). Prerequisite: ARTS 2350, ATEC 2382, or permission of instructor. (0-3) T
ARTS 4308 Image/Text (3 semester hours) An exploration of the visual possibilities inherent in the art of the text. Topics may include an investigation of techniques derived from bookmaking, printmaking, photography, computer imaging, or related media that foster the transformation and combination of words and images. The problem of creating text for presentation in a visual environment will be examined. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: A 3000-level studio art course in an appropriate medium or permission of the instructor. (0-3) T

ARTS 4368 Advanced Visual Arts (3 semester hours) May focus on advanced explorations in a specific medium, such as printing, photography, drawing, sculpture, or video. An emphasis may be placed on particular themes, such as narrative or collaboration, or genres, such as landscape or portraiture, or advanced technical processes. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: A 3000-level course in an appropriate medium or permission of instructor. (0-3) T

ARTS 4372 Advanced Photography (3 semester hours) Explores advanced concepts relating to contemporary artistic and photographic practice, with special emphasis placed on portfolio development. Instruction may include digital or film-based photography (35mm, medium- or large-format photography. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: A 3000-level studio art course in an appropriate medium or permission of the instructor. (3-0) T

ARTS 4V71 Independent Study in Visual Arts (1-3 semester hours) Independent study under a faculty member’s direction. Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). Prerequisite: Upper-division standing and completion of all lower-division requirements in AP and permission of the instructor required. ((1-3)-0) R

Arts and Humanities Course Descriptions

HUMA 1301 (HUMA 1301) Exploration of the Humanities (3 semester hours) An introduction to the concept of cultural tradition through the study of selected works of literature, philosophy, music, and visual art. Emphasis on the relations among various forms of cultural expression and developing students’ ability to interpret complex artistic works in their historical, cultural, and intellectual contexts. General education core course. (3-0) S

HUMA 3300 Reading and Writing Texts (3 semester hours) Focuses on a significant topic or issue through which students are offered an opportunity to gain experience in various analytic and interpretive approaches. Explores connections among artistic and intellectual endeavors appropriate to a range of courses in the Arts and Humanities. This course is a requirement for all AHST, AP, HIST, and LIT majors and should be taken prior to completing first 12 hours of upper-division course work. Prerequisite: HUMA 1301 or equivalency. (3-0) S

HUMA 4399 Senior Honors in Arts and Humanities (3 semester hours) Intended for students conducting independent research for honors theses or projects. Signature of instructor on proposed project outline required. (3-0) R

Arts and Technology Course Descriptions

ATEC 2320 Introductory Topics in Arts and Technology (3 semester hours) Introduces students to the field of arts and technology. Sections may be devoted exclusively to a single aspect of the field or to a combination of related aspects. (3-0) S

ATEC 2321 Writing and Research for New Media (3 semester hours) This writing-intensive course focuses on writing for new and emergent media environments. The course will introduce digital and electronically augmented information-gathering techniques for use in emerging media and communications. Prerequisite: RHET 1302 or permission of instructor. (3-0) Y

ATEC 2322 Introduction to Electronic and Digital Communications (3 semester hours) The course will examine the history of electronic communications with a critical view of their effects on society. The focus will be on the role of the Internet in contemporary life, the commodification of news and information, and will introduce electronic and digital research methods for emerging media and communications. Prerequisite: RHET 1302 or permission of instructor. (3-0) Y

ATEC 2331 Storyboard and Pre-production (3 semester hours) Students learn pre-visualization techniques for planning out time-based media projects (film, video, animation, interactive, etc.). Students are given a survey of visual storytelling techniques, such as framing, composition, camera movements, and editing techniques. Students gain an understanding of narrative story structure and plot construction, as well as learn how to communicate their ideas clearly through the use of storyboards and concept arts. (3-0) S

ATEC 2382 Computer Imaging (3 semester hours) Introduction to digital image-making and manipulation using contemporary software applications. Graphic and photographic methods are presented and applied to art and design problems. Computer images are prepared for multiple delivery environments, including the Internet, games, animation, and print. (0-3) S
ATEC 2383 2D Traditional Animation (3 semester hours) Students learn techniques for traditional hand-drawn animation and fundamental principles of animation that are universally applicable to 2D, 3D, and web based animation. (3-0) S

ATEC 2384 Basic Design Principles and Practices (3 semester hours) Foundational overview of design principles and practices common to all design professions, including general rules, laws, and guidelines of commercial design. Students will be introduced to the language of design, sources and resources of design practice, and design specializations and their integration with various relevant technical disciplines. (0-3) S

ATEC 2385 Sound Design (3 semester hours) Introduction to sound design whose main goal is to show and explain the role of sound in single or multiple aspects of the field, including multimedia productions, animation, video games, movies, and live performances. (0-3) S

ATEC 3317 3D Modeling for Computer Animation (3 semester hours) Explores computer-generated 3D modeling concepts and techniques for 3D computer animation. A conceptual understanding of the elements of surface modeling will be the main focus of this course. Prerequisite: ATEC 2382 [Computer Imaging]. (0-3) S

ATEC 3320 Introduction to Writing and Editing for the World Wide Web (3 semester hours) Introduction to web content writing and editing and the theory and practice of writing online, interactive multi-media text. Emphasis will be placed on editing for the web, fact-checking, and style. The course will emphasize process writing and editorial practices. Prerequisite: RHET 1302. (3-0) S

ATEC 3325 Introduction to Computer Mediated Communication (3 semester hours) An introduction and exploration of the impact of computer technology’s influence on human communications. Emphasis will be placed on survey and study of emerging modalities of computer mediated communication activities. Additional analysis of theoretical perspectives involving linguistics and cultural studies among other approaches. Prerequisite: RHET 1302. (3-0) S

ATEC 3326 Emergent Media and Mass Communications (3 semester hours) The course will introduce emerging practices in new media, such as mobile, distributed, time-shifted, and personal media. It will blend theoretical studies and project-intensive practice in leading-edge applications of digital media, interactive media, and Internet communications. Prerequisite: ATEC 2321 or ATEC 2322 or permission of instructor. (3-0) Y

ATEC 3327 Digital Lighting and Texturing for Computer Animation (3 semester hours) This course focuses on digital lighting, texturing, camera composition, and rendering issues for 3D computer animation. Prerequisite: ATEC 3317. (0-3) Y

ATEC 3330 Digital Video Production (3 semester hours) Introduction to digital video production examining shooting, editing, and nonlinear post-production techniques. Students will work individually and in teams to produce short video projects. A variety of delivery environments may be explored, including web, mobile, and DVD. (0-3) Y

ATEC 3331 Computer Game Development (3 semester hours) Introduction to methods and techniques used in the design and creation of interactive computer games. Coursework will focus on the basic principles of game-play mechanics, player dynamics, and project management. May be repeated for credit (9 hours maximum). Prerequisites: ATEC 2382 and CS 1337 or CS 2336. (0-3) Y

ATEC 3352 Computer Game Design (3 semester hours) Introduction to critical analysis and creative design of interactive games. Topics include player motivation, game dynamics, gamer culture, and the formation of compelling experiences within increasingly complex, open-ended technology. May be repeated for credit (6 hours maximum). Prerequisite: RHET 1302. (0-3) Y

ATEC 3361 Internet Studio (3 semester hours) Introduction to researching, designing, producing, and distributing Internet content. Through readings, class discussions, and class projects, this class focuses on the various means and techniques for publishing networked digital material. The course will help students develop the ability to create and present a networked portfolio of their digital work. Prerequisite: ATEC 2382. (0-3) Y

ATEC 3363 Basic Interaction Design (3 semester hours) Study of human-machine interaction for art and design applications. Students explore existing models for interaction as used in web-based publishing, game development, entertainment and artistic performances. The creation of new models of interaction using multi-modal devices (haptic devices) is pursued. Prerequisite: ATEC 2382. (0-3) Y

ATEC 3365 Virtual Environments (3 semester hours) Explores advanced methods and techniques used in the design and creation of virtual environments. Topics will include aesthetics, architecture, scripting, and deployment. Prerequisite: ATEC 3317. (0-3) Y

ATEC 4326 Emergent Media Production (3 semester hours) The course explores production studio and field practices in the development of emerging forms of digital media and communications. Students will work individually and in teams to produce new media projects using a variety of different methods and technologies. Areas of investigation may include weblogs, video blogs, podcasts, mobile media, and social media projects. Prerequisite: ATEC 3326 or permission of instructor. (3-0) Y
ATEC 4337 **Computer Animation** *(3 semester hours)* This course focuses on applications of the principles of animation. Students learn to create expressive motions through the production of 3D key-frame animations. Prerequisite: ATEC 3327. (0-3) Y

ATEC 4340 **Business and the Digital Arts** *(3 semester hours)* Students will use their knowledge of business, digital entertainment, and the Internet along with reasoning and communication skills to analyze and develop solutions to a variety of business problems facing companies in the global digital economy. Course may be repeated as topics vary (6 hours maximum). Prerequisite: Upper-division standing. (0-3) Y

ATEC 4345 **Motion Capture Animation** *(3 semester hours)* Group projects in which students learn the motion capture pipeline from setting up cameras and capturing data to editing data and applying data to animated characters. Students will follow 3D computer animation production process to complete short animations. End products are expected to be high quality animations appropriate for professional demo reels. May be repeated for credit (9 hours maximum). Prerequisite: ATEC 4337. (0-3) S

ATEC 4346 **Story-Telling for New Media** *(3 semester hours)* Theory, principles and practice of narratives created for distribution via digital media. Includes study of the creation of both linear and nonlinear digital content for Internet distribution. Prerequisite: ATEC 3361. (0-3) Y

ATEC 4347 **Advanced Design** *(3 semester hours)* Explores advanced concepts and techniques in design including the use of computer-assisted creation of images. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: ATEC 3361 or ATEC 3363. (0-3) Y

ATEC 4348 **Advanced 3D Modeling** *(3 semester hours)* Builds on modeling principles and techniques introduced in ATEC 3317. The main focus of the course is an understanding of advanced geometric mesh construction and deformation. Prerequisite: Permission of instructor. (0-3) Y

ATEC 4349 **Advanced Lighting and Texturing** *(3 semester hours)* Builds on lighting and texturing principles and techniques introduced in ATEC 3327. Students will create realistic imagery utilizing professional practices such as 3D paint packages and advanced mapping methods. Prerequisite: Permission of instructor. (0-3) Y

ATEC 4357 **Advanced Digital Arts** *(3 semester hours)* Explores application of advanced computer imaging techniques to the creation of visual art. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: ATEC 3361 or ATEC 2382. (0-3) Y

ATEC 4367 **Advanced Computer Game Development** *(3 semester hours)* Study of advanced methods and techniques (literary, artistic, conceptual, technical) used in original game development. Students will be required to design, develop, and deploy computer games independently and as members of a team. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: Permission of instructor. (0-3) Y

ATEC 4370 **Topics in Arts and Technology** *(3 semester hours)* Study of fundamental principles and basic techniques of arts and technology. Sections may be devoted exclusively to a single aspect of the arts and technology or to a multiplicity of subjects related to the field. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: Upper division standing or permission of instructor. (0-3) R

ATEC 4371 **Topics in Animation** *(3 semester hours)* Course offers a further exploration of ideas and principles utilized in the animation process. Sections may be devoted to a single aspect of animation or to a variety of subsections in the field. May be repeated for credit as topics vary (12 hours maximum). Prerequisite: Permission of instructor. (0-3) Y

ATEC 4372 **Topics in Emerging Media and Communications** *(3 semester hours)* The course studies fundamental principles and basic techniques of emerging media and communications. Sections may be devoted exclusively to a single aspect of emerging media and communications or to a multiplicity of subjects related to the field. May be repeated for credit as topics vary (12 hours maximum). Prerequisite: Upper division standing. (3-0) R

ATEC 4373 **Topics in Game Development** *(3 semester hours)* Course offers a further exploration of principles and techniques of computer game design, development, and theory. Sections may be devoted to a single aspect of game development or to a variety of subjects in the field. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: Permission of instructor. (0-3) Y

ATEC 4374 **Topics in Digital Design** *(3 semester hours)* Fundamental digital design methods that lay a foundation for more specific design-oriented areas of interest. Topics may include: research and planning, drawing and composition, color/graphics and presentation, prototyping and testing. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: Permission of instructor. (0-3) Y

ATEC 4375 **Topics in Sound Design** *(3 semester hours)* This class will focus on the role of sound in one or several of the various domains of multimedia production, including, but not limited to animation, video games, movies, live performance, and interactive environments. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: Permission of instructor. (0-3) Y
ATEC 4380 Capstone Project (3 semester hours) Culminating course in Arts and Technology. Students will engage in the creation of an advanced creative and/or research project exploring the interaction of the arts with digital technology. Restricted to students majoring in Arts and Technology who are within one semester of graduation. Prerequisite: Permission of Instructor. (0-3) Y

ATEC 4399 Senior Honors in Arts and Technology (3 semester hours) Intended for students conducting independent research for honors theses or projects. Topics may vary. Signature of instructor on proposed project outline required. (3-0) R

ATEC 4V71 Independent Study in Arts and Technology (1-3 semester hours) Independent study under a faculty member’s direction. Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). Prerequisite: Upper-division standing, and completion of all lower-division requirements in ATEC and permission of the instructor. ([1-3]-0) R

Biology Course Descriptions

All Biology Core courses, which are required for the B.S. and B.A. degrees, are offered fall and spring.

BIOL 1300 Body Systems with Lab (3 semester hours) Examines the organ systems of mammals, predominantly the human. Function in relation to structure is emphasized. The effects of one organ system on others are stressed. The overall objective of the course is an appreciation of the integration and control of all systems. There is a model-based human anatomy lab. This course is specifically designed for non-majors. (2-1) S

BIOL 1310 Basics of Biotechnology with Lab (3 semester hours) An introduction to basic biotechnology principles for those not majoring in the natural sciences. This course will introduce students to the general concepts and principles of the genetic revolution. The role of biotechnology in everyday life will be explored together with a discussion of the impact it presently plays (and will play) on our health, the environment, agriculture and industry. In the laboratory portion of the course students will purify and manipulate DNA and gene products, grow genetically modified organisms, and perform DNA fingerprinting. (2-1) T

BIOL 1318 (BIOL 2316) Human Genetics (3 semester hours) Elementary course in the fundamentals of human genetics. Topics include patterns of inheritance; DNA structure and replication; gene function; mutation and its role in genetic diseases, cancer, and the immune system; matters of sex; evolution; genetic engineering and gene therapy; forensics and bioethics. This course is specifically designed for non-majors. (3-0) Y

BIOL 1320 (BIOL 2320) The Microbial World with Lab (3 semester hours) Contributions of microorganisms to our world are explored. Topics include the involvement of microbes in many aspects of our daily lives, from helping to create the air we breathe to the production of foods (such as bread, cheese) and beverages (beer, wine). The laboratory component includes interactive experiments which complement the lecture topics. This course is specifically designed for non-majors. (2-2) Y

BIOL 1V00 Topics in Biological Sciences (1-6 semester hours) May be repeated as topics vary (6 hours maximum). ([1-6]-0) R

BIOL 1V01 Topics in Biological Sciences with Lab (1-6 semester hours) May be repeated as topics vary (6 hours maximum). ([1-5]-[1-5]) R

BIOL 1V95 Individual Instruction in Biology (1-6 semester hours) Individual study under a faculty member’s direction. Topics may vary. May be repeated for credit. Consent of instructor required. ([1-6]-0) S

BIOL 2111 Introduction to Modern Biology Workshop I (1 semester hour) Problem solving and discussion related to the subject matter in BIOL 2311. Corequisite: BIOL 2311. (1-0) S

BIOL 2112 Introduction to Modern Biology Workshop II (1 semester hour) Problem solving and discussion related to the subject matter in BIOL 2312. Corequisite: BIOL 2312. (1-0) S

BIOL 2281 Introductory Biology Laboratory (2 semester hours) Introductory lectures discuss the theoretical and historical aspects of the experiments carried out in the laboratory. Laboratory experiments introduce the student to bioinformatics, basic cellular biology, and structure and function of proteins and nucleic acids. Computer exercises in bioinformatics involve multiple alignment analyses, BLAST and literature searches, and construction of phylogenetic trees. Laboratory experiments include microscopy, microbial techniques, yeast genetics, and the electrophoretic behavior of normal and mutant proteins. DNA related experiments include isolation (nuclear and mtDNA), amplification, restriction digests, electrophoresis, plasmid mapping, and transformations. Students present posters of their long-term investigations at the end of the semester. Prerequisite: BIOL 2311 (also see prerequisites for BIOL 2311). ([0-1]-[1-2]) S

BIOL 2311 (BIOL 1306) Introduction to Modern Biology I (3 semester hours) Presentation of some of the fundamental concepts of modern biology, with an emphasis on the molecular and cellular basis of biological phenomena. Topics include the
chemistry and metabolism of biological molecules, elementary classical and molecular genetics, and selected aspects of developmental biology, physiology (including hormone action), immunity, and neurophysiology. Prerequisites: CHEM 1311 and CHEM 1312 (General Chemistry I and II). Corequisite: BIOL 2111. (3-0) S

BIOL 2312 (BIOL 1307) Introduction to Modern Biology II (3 semester hours) Continuation of BIOL 2301. The overall emphasis will be on organism physiology and regulatory mechanisms involving individual organs and organ systems. Factors considered will be organ development and structure, evolutionary processes and biological diversity, and their effects on physiological mechanisms regulating the internal environment. Corequisite: BIOL 2112. (3-0) S

BIOL 2V00 Topics in Biological Sciences (1-6 semester hours) May be repeated as topics vary (6 hours maximum). ([1-6]-0) R

BIOL 2V01 Topics in Biological Sciences with Lab (1-6 semester hours) May be repeated as topics vary (6 hours maximum). ([1-5]-[1-5]) R

BIOL 2V95 Individual Instruction in Biology (1-6 semester hours) Individual study under a faculty member’s direction. Topics may vary. May be repeated for credit. Consent of instructor required. ([1-6]-0) S

BIOL 3101 Classical and Molecular Genetics Workshop (1 semester hour) Problem solving and discussion related to the subject matter in BIOL 3301. Prerequisites: BIOL 2281, BIOL 2311, and BIOL 2312 or their equivalents. Corequisite: BIOL 3301. (1-0) S

BIOL 3102 Eukaryotic Molecular and Cell Biology Workshop (1 semester hour) Problem solving and discussion related to the subject matter in BIOL 3302. Prerequisites: BIOL 2281, BIOL 2311, and BIOL 2312 or their equivalents. Corequisite: BIOL 3302. (1-0) S

BIOL 3161 Biochemistry Workshop I (1 semester hour) Problem solving methodology in biochemistry; discussion of recent advances in areas related to the subject matter in BIOL/CHEM 3361. Prerequisites: BIOL 2281, BIOL 2311, and BIOL 2312 or their equivalents. Corequisite: BIOL/CHEM 3361. (1-0) S

BIOL 3162 Biochemistry Workshop II (1 semester hour) Problem-solving methodology in biochemistry; discussion of recent advances in areas related to the subject matter in BIOL 3362. Prerequisites: BIOL 2281, BIOL 2311, and BIOL 2312 or their equivalents. Corequisite: BIOL/CHEM 3362. (1-0) Y

BIOL 3301 Classical and Molecular Genetics (3 semester hours) The phenomenon of heredity, its cytological and molecular basis; gene expression and transfer of genetic information, with major focus on bacterial and model eukaryotic systems; genetic recombination and chromosome mapping; tetrad analysis; mutations and mutagenesis; genetic interactions; application of recombinant DNA techniques to genetic analysis. Prerequisites: BIOL 2311 and CHEM 2323 (Organic Chemistry I). Corequisite: BIOL 3301. (3-0) S

BIOL 3302 Eukaryotic Molecular and Cell Biology (3 semester hours) Structural organization of eukaryotic cells; regulation of cellular activities; membranes and transport; cellular replication; examples of cell specialization such as blood (immunoglobulins) and muscle cells. Prerequisites: BIOL 3301 and BIOL/CHEM 3361. Corequisite: BIOL 3302. (3-0) S

BIOL 3305 Evolutionary Analysis (3 semester hours) Molecular and fossil evidence for evolution, Darwinian natural selection, mechanisms of evolution, Mendelian genetics in populations, forms of adaptation, evolutionary trees, molecular phylogeny, theories on the origin of life. Prerequisite: BIOL 3301. (3-0) Y

BIOL 3318 Forensic Biology (3 semester hours) Role and methodology of biological testing in criminal investigation and forensic science. Analysis of the procedures and methodologies employed in the collection, preservation and screening of biological evidence, and protein and DNA testing. Population genetics employed during the statistical evaluation of data is covered. The course is structured to allow individuals with and without biological training to participate. The subject matter will be developed from the concept of “What is DNA?” through “What does a statistical estimate really mean?” No prerequisites. (3-0) T

BIOL 3321 Microbial Genetics Laboratory (3 semester hours) Laboratory with introductory lecture that will focus on the genetic methods used for analysis of complex biological processes in bacteria. Includes the utilization of chemical and physical mutagens; transformation; transduction; conjugation; transposons; gene fusions; molecular cloning; polymerase chain reaction; southern, northern and western blot analyses; and post-genomic genetics. The course will also emphasize how these sophisticated techniques can be used to dissect pathogenic mechanisms and enhance environmental remediation. Prerequisites: BIOL 2281, BIOL 2311, and BIOL 2312 or their equivalents. (1-2) T

BIOL 3335 Microbial Physiology (3 semester hours) Life processes of microbes: fermentations, N2 assimilation, and other biochemical pathways specific to bacteria; cellular structure and differentiation, among others. Substitutes for BIOL/CHEM 3362 for Biology majors. Prerequisites: BIOL 2311 and BIOL/CHEM 3361. (3-0) T

BIOL 3336 Protein and Nucleic Acid Structure (3 semester hours) Examines the different types of protein motifs, protein and DNA folding and stability, and the relation of structure to function. Circular dichroism, NMR, and crystallographic methods of
structural determination are presented. Types of proteins considered include transcription factors, proteinases, membrane proteins, proteins in signal transduction, proteins of the immune system, and engineered proteins. Students also receive instruction in the viewing and manipulation of protein and DNA structures using various modeling programs and data from national web sites. Prerequisite: BIOL/CHEM 3361. (3-0) T

**BIOL 3350 Biological Basis of Health and Disease** *(3 semester hours)* Fundamentals of pathophysiology, focusing on the dynamic processes that cause disease, give rise to symptoms, and signal the body’s attempt to overcome disease. The course covers diseases which may affect dramatically the life of an individual and society in the modern age. Topics include 1) mechanisms of infectious disease, immunity, and inflammation and 2) alterations in structure and function of the reproductive, circulatory, respiratory, and urinary systems. Special emphasis is given to preventative aspects for each disease based on non-drug, wellness-promoting approaches. This course is designed as a science elective open to all majors. No prerequisites. *(3-0)* S

**BIOL 3351 Secrets of Cells** *(3 semester hours)* Explores the biology of cells, from bacterial to human. Topics include the basic structure of cells, structure and inheritance of DNA, evolution of eukaryotic cells, functioning of different types of cells and tissues, including those of the immune and nervous system, and the study of several genetic diseases, such as cancer and cardiovascular disease. This course is specifically designed as a science elective open to all majors. No prerequisites. *(3-0)* T

**BIOL 3361 Biochemistry I** *(3 semester hours)* Structures and chemical properties of amino acids; protein purification and characterization; protein structure and thermodynamics of polypeptide chain folding; catalytic mechanisms, kinetics and regulation of enzymes; energetic of biochemical reactions; generation and storage of metabolic energy associated with carbohydrates; oxidative phosphorylation and electron transport mechanisms; photosynthesis. Prerequisites: CHEM 2325 and CHEM 2325 (Organic Chemistry I and II). Corequisite: BIOL 3361. *(Same as CHEM 3361)* *(3-0)* S

**BIOL 3362 Biochemistry II** *(3 semester hours)* Breakdown and synthesis of lipids; membrane structure and function; nitrogen metabolism and fixation; nucleotide metabolism; structure and properties of nucleic acids; sequencing and genetic engineering; replication, transcription, and translation; chromosome structure; hormone action; biochemical basis of certain pathological processes. Prerequisite: BIOL/CHEM 3361 or its equivalent, or consent of instructor. Co-requisite: BIOL 3162. *(Same as CHEM 3362)* *(3-0)* Y

**BIOL 3370 Exercise Physiology** *(3 semester hours)* Examines the operation and adaptation of human organ systems (cardiovascular, respiratory, renal, skeletal, and hormonal) during exercise. Clinical aspects of exercise, including the effects of training, nutrition, performance, and ergogenic aids, are also discussed. Prerequisite: BIOL 2312. Recommended: BIOL 3455 and 3456. *(3-0)* Y

**BIOL 3371 Biology of the Brain** *(3 semester hours)* Explores the structure and function of the brain. Includes discussions of the molecular and cell biology of neurons, organization of the nervous system and anatomy of the brain, basic electrophysiology of the neuron, function and action of neurotransmitters, operation of sensory and motor systems, and the molecular and cellular basis of neurodegenerative disorders. Prerequisites: BIOL 2281, BIOL 2311, and BIOL 2312 or their equivalents. *(3-0)* T

**BIOL 3380 Biochemistry Laboratory** *(3 semester hours)* Current techniques in the purification and characterization of enzymes to demonstrate fundamental principles that are utilized in modern biochemistry and molecular biology research laboratories. Practical skills taught include micropipetting, basic solution preparation, conducting pH measurements, isolating crude enzyme extracts, and performing standard activity assays. Advanced experiments with Green Fluorescent Protein and Lactate Dehydrogenase include Ni^{+2}-NTA affinity chromatography, ion chromatography, protein detection using Bradford, Lowry, and spectrophotometric assays, SDS-PAGE separation, Western Blot analysis, and enzyme kinetics. Prerequisite: BIOL 2281. Prerequisite or co-requisite: BIOL/CHEM 3361. *(1-2)* S

**BIOL 3455 Human Anatomy and Physiology with Lab I** *(4 semester hours)* First of a two-course sequence providing a comprehensive study of the basic principles of human physiology in conjunction with a detailed, model-based human anatomy laboratory and computer-assisted physiology experiments. Examination of structure-function relationships includes a survey of human histology and skeletal, muscular, neural, and sensory organ systems. Prerequisite: BIOL 2312 or equivalent. *(3-3)* S

**BIOL 3456 Human Anatomy and Physiology with Lab II** *(4 semester hours)* Continuation of the comprehensive study of the basic principles of human physiology in conjunction with a detailed, model-based human anatomy laboratory and computer-assisted physiology experiments. Endocrine, cardiovascular, respiratory, digestive, renal, and reproductive systems are examined. May be taken before BIOL 3455. Prerequisite: BIOL 2312 or equivalent. *(3-3)* S

**BIOL 3V00 Topics in Biological Sciences** *(1-6 semester hours)* May be repeated as topics vary (9 hours maximum). Prerequisites: BIOL 2281, BIOL 2311, and BIOL 2312 or their equivalents. *(1-6)* S

**BIOL 3V01 Topics in Biological Sciences with Lab** *(1-6 semester hours)* May be repeated as topics vary (6 hours maximum). Prerequisites: BIOL 2281, BIOL 2311, and BIOL 2312 or their equivalents. *(1-5)* S

**BIOL 3V20 General Microbiology with Lab** *(4-5 semester hours)* Majors course in general microbiology. Lectures include topics recommended by the Education Division of the American Society for Microbiology: microbial structure, diversity, growth and
growth control, metabolism, genetics, and gene regulation. Among additional topics covered are virology, immunology and microbial diseases (plant and animal) including epidemiology, transmission, and host-microbe interactions. The laboratory focuses on developing laboratory skills in classical microbiology by the individual student. Exercises include various staining and pure culture techniques, biochemical and other in vitro testing, as well as isolation and identification of unknown organisms. Topics may vary. May be repeated for credit. Prerequisites: BIOL 2281, BIOL 2311, and BIOL 2312 or their equivalents and CHEM 2323. (2-[2-3]) Y

BIOL 3V40 Topics in Molecular and Cell Biology (1-6 semester hours) May be repeated as topics vary (9 hours maximum). Prerequisites: BIOL 2281, BIOL 2311, and BIOL 2312 or their equivalents. ([1-6]-[0-5]) S

BIOL 3V90 Undergraduate Readings in Biology (1-3 semester hours) Subject and scope to be determined on an individual basis. Topics may vary. May be repeated for credit. Prerequisite: Consent of instructor. ([1-3]-[0-5]) S

BIOL 3V91 Undergraduate Research in Biology (1-3 semester hours) Subject and scope to be determined on an individual basis. Topics may vary. May be repeated for credit. Prerequisite: Consent of instructor. ([1-3]-[0-5]) S

BIOL 3V92 Undergraduate Readings in Biochemistry (1-3 semester hours) Subject and scope to be determined on an individual basis. Topics may vary. May be repeated for credit. Prerequisite: Consent of instructor. ([1-3]-[0-5]) S

BIOL 3V93 Undergraduate Research in Biochemistry (1-3 semester hours) Subject and scope to be determined on an individual basis. Topics may vary. May be repeated for credit. Prerequisite: Consent of instructor. (Same as CHEM 3V92) ([1-3]-[0-5]) S

BIOL 3V94 Topics in Biology (Individual Instruction) (1-6 semester hours) Individual study under a faculty member's direction. May be repeated for credit. Consent of instructor required. ([1-6]-[0-5]) S

BIOL 3V95 Undergraduate Readings in Molecular and Cell Biology (1-3 semester hours) Subject and scope to be determined on an individual basis. Topics may vary. May be repeated for credit. Prerequisite: Consent of instructor. ([1-3]-[0-5]) S

BIOL 3V96 Undergraduate Research in Molecular and Cell Biology (1-3 semester hours) Subject and scope to be determined on an individual basis. Topics may vary. May be repeated for credit. Prerequisite: Consent of instructor. ([1-3]-[0-5]) S

BIOL 4261 Biomolecular Modeling (2 semester hours) Designed to provide some of the computational tools needed to study the large number of biomolecular structures now available in databanks. Molecular Simulations Insight II software will be used to visualize and manipulate protein and nucleic acid structures. Students will build examples of small 3-dimensional molecules from amino acid, nucleotide, and sugar residues. Procedures for energy minimization will be studied. Homologous protein structures will be compared, and mutated structures will be modeled. Other modeling approaches such as Monte Carlo and molecular or Brownian dynamics may be included. Prerequisites: BIOL 3301, BIOL 3302, and BIOL/CHEM 3361 or their equivalents, or the written consent of the instructor. (1-1) T

BIOL 4302 TA Apprenticeship (3 semester hours) Development and practice of teaching skills in the classroom and laboratory in the biological sciences. May be repeated only once for credit (6 hours maximum). Prerequisite: Written consent of the instructor. (3-0) S

BIOL 4308 Developmental Biology (3 semester hours) Molecular mechanisms controlling development in eukaryotes, with emphasis on the early stages of morphogenesis. Prerequisites: BIOL 3301, BIOL 3302, and BIOL/CHEM 3361 or their equivalents, or the written consent of the instructor. (3-0) T

BIOL 4316 Parasites and Symbionts (3 semester hours) A survey of microorganisms that live in close association with other organisms. From bacteriophages to trypanosomes, this course will cover a wide range of plant and animal parasites and symbionts and their interactions at the molecular level. Prerequisites: BIOL 3301. BIOL 3302 and BIOL/CHEM 3361 or their equivalents, or the written consent of the instructor. (3-0) T

BIOL 4332 RNA Structure and Catalysis (3 semester hours) A survey of the determinants of RNA secondary and tertiary structure and their role in RNA processing and catalysis. The mechanisms of posttranscriptional RNA processing including base modifications, mRNA capping and poly A addition, 5' and 3' end maturation, intron excision, and RNA editing will be covered as well as the mechanisms of RNA catalysis. The mechanisms of large ribozymes such as Group I and Group II introns and RNAase P RNA will be contrasted to the mechanisms of small ribozymes such as hairpins and hammerheads. Prerequisites: BIOL 3301, BIOL 3302, and BIOL/CHEM 3361 or their equivalents, or the written consent of the instructor. (3-0) T

BIOL 4333 Replication, Recombination, and Repair (3 semester hours) A fundamental unifying principle of molecular biology, genetics, molecular medicine, and evolution is DNA metabolism. This course will provide an extensive overview of the mechanisms that control the processes of DNA repair, replication, and recombination. The most recent publications in these fields will be discussed in order to provide the students with a strong working knowledge of these processes. The course structure will consist of a mixture of faculty lectures and student literature presentations. Student evaluations will be based upon examinations, class participation, and the written and oral presentations. Prerequisites: BIOL 3301, BIOL 3302, and BIOL/CHEM 3361 or their equivalents, or the written consent of the instructor. (3-0) T
BIOL 4336 Membrane Biology (3 semester hours) A survey of the structural components of biomembranes and the forces that dictate membrane structure. General membrane functions, such as compartmentalization and membrane transport, are analyzed in view of the principles of membrane structure. The structure, function, and biogenesis of the membrane organelles in cells are covered in detail. Diseases whose pathology originates with biomembranes, such as cystic fibrosis and heart disease, are discussed as examples illustrating membrane structure and function. Prerequisites: BIOL 3301, BIOL 3302, and BIOL/CHEM 3361 and BIOL/CHEM 3362 or their equivalents, or the written consent of the instructor. (3-0) T

BIOL 4337 Seminal Papers in Biology (3 semester hours) Theoretical and experimental papers in selected areas of biology will be discussed in a senior seminar format. The historical and biographical context of the papers and their authors will also be explored. The areas to be covered in any semester will vary with the instructor. Each student is expected to make an oral presentation and to prepare a written paper. Satisfies the Advanced Writing Requirement for Biology majors. Prerequisites: BIOL 3301, BIOL 3302, BIOL/CHEM 3361, and BIOL/CHEM 3362. (3-0) S

BIOL 4338 Cell Signaling (3 semester hours) How cells sense, interpret, and respond to various intra- and extracellular signals. Focus will be placed on signal transduction pathways controlling growth, development, and diseases. The course will consist of lectures and in-class discussion of research articles. Prerequisites: BIOL 3301, BIOL 3302, and BIOL/CHEM 3361 or their equivalents, or the written consent of the instructor. (3-0) T

BIOL 4340 Proteomics (3 semester hours) Covers the modern techniques for analyzing the protein complement of cells, to understand cell development and physiology in healthy and diseased states. Topics include protein isolation techniques; IEF-SDS PAGE; protein structure determination by X-ray crystallography and NMR; techniques for identification of protein interactions; the use of mass spectrometry to quantitate, sequence, and identify post-translational modifications of proteins; the development of protein chips and how they can be used for protein identification and quantitation. Prerequisite: BIOL/CHEM 3361. (3-0) T

BIOL 4341 Genomics (3 semester hours) Fundamentals of how the human genome sequence was acquired and the impact of the human genome era on biomedical research, medical care and genetic testing. Also covered is the impact new tools such as DNA microarray, realtime PCR, mass spectrometry and bioinformatics will have on approaches to how scientific questions are investigated. The class will be a mixture of didactic lectures and paper presentations on examples of applied genomics. There will be two computer-based labs where students will perform online bioinformatics and data mining using the NCBI public database. Prerequisite: BIOL 3301 with a grade of C or better. (3-0) T

BIOL 4342 Regulation of Gene Expression (3 semester hours) How genetic information is regulated in prokaryotic and eukaryotic systems. Topics include mechanisms of transcription, promoter architecture, function and regulation of transcription factors, organization of chromosomes, pathways that control gene expression during growth and development, genome organization and whole-genome expression analysis, and related areas. The course emphasizes presentation and critical discussion of techniques and results from the recent scientific literature. Prerequisites: BIOL 3301, BIOL 3302, and BIOL/CHEM 3361 or their equivalents, or the written consent of the instructor. (3-0) T


BIOL 4350 Medical Microbiology (3 semester hours) This course will cover the methods used for identification of pathogenic organisms and the study of these organisms in relation to their disease process in humans. We will also cover at the molecular level important concepts such as microbial virulence, the control of bacterial growth, and host responses to infection. Prerequisite: BIOL 3301 or BIOL 3420. (3-0) T

BIOL 4352 Medical Molecular and Cell Biology (3 semester hours) Topics related to health and disease will be examined from a molecular and cellular perspective. Topics will vary but will be selected from new and developing applications of cell biology to cancer, heart disease, fat metabolism, mitochondrial disorders, aging, Alzheimer’s, etc. Students are expected to participate actively in discussions and make an oral presentation. Prerequisite: BIOL 3302. (3-0) T

BIOL 4353 Molecular Biology of HIV/AIDS (3 semester hours) Topics include a discussion of the history and epidemiology of AIDS, the likely origins of human immunodeficiency virus (HIV), and the molecular and cell biology of HIV replication. The cell biological basis of the immunodeficiency induced by HIV infection is examined, as well as that of common accompanying pathologies such as Kapo’s sarcoma. The molecular basis of a variety of existing and potential anti-viral therapies is considered. Suggested prerequisite: BIOL 3302. (3-0) T

BIOL 4355 Molecular Biology of Neurological and Hematological Diseases (3 semester hours) Neurological and hematological diseases affect millions of Americans each year, often fatally. The course will bring students up to date on current knowledge of the molecular biology of neurological diseases such as Alzheimer’s, Parkinson’s, Amyotrophic lateral sclerosis and Huntington’s disease. Hematological diseases such as hemolytic anemias including sickle cell disease and thalassemia, platelet disorders and clinical case studies will be covered, along with efforts towards gene therapy. The course comprises lectures,
student presentations, and presentations by world experts in the field. Prerequisites: BIOL 3301, BIOL 3302, and BIOL/CHEM 3361 or their equivalents, or the written consent of the instructor. (3-0) T

BIOL 4365 Advanced Human Physiology (3 semester hours) Function and integration of human organ systems. The role of these systems in the adaptation of humans to, and their interaction with, the environment. Maintenance and perturbation of homeostasis. Pathophysiological basis of certain diseases. Prerequisite: BIOL 3302 or consent of instructor. (3-0) T

BIOL 4366 Molecular Biology of Cancer (3 semester hours) Subject matter includes a discussion of representative examples of the principal categories of dominantly acting oncogenes. The role in oncogenesis of tumor suppressor genes ("recessive oncogenes") is also considered, as are anti-apoptotic oncogenes such as Bcl. The roles that the proteins encoded by these genes play in growth hormone signal transduction, gene regulation, cell cycle regulation, and programmed cell death will be examined. Students will also read and discuss the primary literature in this field. Prerequisite: BIOL 3302. (3-0) T

BIOL 4370 Developmental Neurobiology (3 semester hours) Examines some of the remarkable progress made in recent years towards understanding how the nervous system develops. Among topics covered are signals regulating formation of neural tissue, patterning of the brain, differentiation and migration of neurons, formation of neural connections, neuronal survival, and elimination of superfluous cells. Course is designed to be interactive and will include lectures, student presentations, and discussion of important discoveries in the area. Prerequisites: BIOL 2311 and BIOL 3301. (3-0) T

BIOL 4375 Bioinformatics (3 semester hours) A practical approach to quantitative and statistical analysis of biological sequence and structural information. Classroom lectures are accompanied by practical demonstrations and computer lab exercises. Topics include genomic information content, data searches and sequence alignment, mutations and distance-based phylogenetic analysis, genomics and gene recognition, polymorphisms and forensic applications, nucleic-acid and protein array analysis, and structure prediction of biological macromolecules. Pre-requisites: BIOL 3301, BIOL 3361 and two semesters of calculus. Suggested additional preparation: one semester introductory statistics. (3-0) T

BIOL 4380 Cell and Molecular Biology Laboratory (3 semester hours) Current techniques that are utilized in a modern Molecular Biology research laboratory. Practical skills taught include monitoring bacterial growth, phenotype testing, plasmid isolation, restriction digest analysis, DNA cloning, and DNA fingerprinting using the polymerase chain reaction (PCR). Advanced techniques include fundamental microscopy, DNA transfection and general characterization of animal cell cultures, sub-cellular fractionation using differential centrifugation, basic immunological techniques, and chemical mutagen testing. Prerequisite: BIOL 3380. Pre- or co-requisite: BIOL 3302. (1-2) S

BIOL 4382 Advanced Molecular Biology Laboratory (3 semester hours) Advanced techniques for the study of biological systems: spectroscopy, ultracentrifugation, radioactive labeling, and construction and screening of cDNA expression libraries. Prerequisites: BIOL 3301, BIOL 3302, and BIOL/CHEM 3361 or their equivalents, or the written consent of the instructor. (1-2) Y

BIOL 4390 Senior Readings in Molecular and Cell Biology (Advanced Writing) (3 semester hours) For students conducting independent literature research and scientific writing in Biology or Molecular and Cell Biology. Subject and scope to be determined on an individual basis. Satisfies the Advanced Writing Requirement for Biology and Molecular Biology majors. Topics may vary. Prerequisite: Consent of instructor. (3-0) S

BIOL 4391 Senior Research in Molecular and Cell Biology (Advanced Writing) (3 semester hours) For students conducting laboratory research and scientific writing in Biology or Molecular and Cell Biology. Subject and scope to be determined on an individual basis. Satisfies the Advanced Writing Requirement for Biology and Molecular Biology majors. Topics may vary. Prerequisite: Consent of instructor. (3-0) S

BIOL 4398 Senior Honors Readings in Molecular and Cell Biology (Thesis/Advanced Writing) (3 semester hours) For students conducting independent literature research for honors in Biology or Molecular and Cell Biology. Besides the university specifications the student should contact the undergraduate advisor in biology for program requirements. Satisfies the Advanced Writing Requirement for Biology and Molecular Biology majors. Topics may vary. Prerequisite: Consent of instructor. (3-0) S

BIOL 4399 Senior Honors Research in Molecular and Cell Biology (Thesis/Advanced Writing) (3 semester hours) For students conducting independent laboratory research for honors in Biology or Molecular and Cell Biology. Besides the university specifications the student should contact the undergraduate advisor in biology for program requirements. Satisfies the Advanced Writing Requirement for Biology and Molecular Biology majors. Topics may vary. Prerequisite: Consent of instructor. (3-0) S

BIOL 4461 Biophysical Chemistry (4 semester hours) For students interested in the interface between biochemistry and structural biology. Provides an advanced treatment of the physical principles underlying modern molecular biology techniques. Topics include classical and statistical thermodynamics, biochemical kinetics, transport processes (e.g., diffusion, sedimentation, viscosity), chemical bonding, and spectroscopy. Prerequisites: MATH 2417 and 2419; PHYS 2325 and 2326, PHYS 3341 and 3342, or equivalent; BIOL/CHEM 3361. (Same as CHEM 4461) (4-0) Y

BIOL 4V00 Special Topics in Biology (1-6 semester hours) May be repeated as topics vary (9 hours maximum). Prerequisites: BIOL 3301, BIOL 3302, and BIOL/CHEM 3361 or their equivalents, or the written consent of the instructor. (1-6) S
BIOL 4V01 Topics in Biological Sciences with Lab (1-6 semester hours) May be repeated as topics vary (6 hours maximum). Prerequisites: BIOL 3301, BIOL 3302, and BIOL/CHM 3361 or their equivalents, or the written consent of the instructor. ([1-5]-[1-5]) R

BIOL 4V04 Biology Seminar (1-6 semester hours) May be repeated as seminar topics vary (6 hours maximum). Prerequisites: BIOL 3301, BIOL 3302, and BIOL/CHM 3361 or their equivalents, or the written consent of the instructor. ([1-6]-[0-5]) S

BIOL 4V40 Special Topics in Molecular and Cell Biology (1-6 semester hours) May be repeated as topics vary (9 hours maximum). Prerequisites: BIOL 3301, BIOL 3302, and BIOL/CHM 3361 or their equivalents, or the written consent of the instructor. ([1-6]-[0-5]) S

BIOL 4V51 Techniques in Medical Microbiology (1-3 semester hours) This course will teach students to become proficient in laboratory techniques used in both basic and medical microbiology. The initial portion of the course will cover basic techniques such as safe handling of microorganisms, media preparation, pure culture techniques, and staining of microorganisms. The majority of the course will involve the theory and use of physical and biochemical methods to examine microbial physiology, and the use of these methods in organism identification. Microorganisms to be studied include bacterial (and their viruses), fungi, and protozoa. Students will demonstrate proficiency by identifying unknown organisms in pure and mixed cultures, and by the ability to distinguish potential pathogens from resident and normal flora in various clinical specimens. Prerequisite: BIOL 3301 or BIOL 3V20. (0-[2-6]) T

BIOL 4V95 Advanced Topics in Biology (Individual Instruction) (1-6 semester hours) Individual study under a faculty member’s direction. May be repeated for credit as topics vary. Consent of instructor required. ([1-6]-0) S

BIOL 4V98 Senior Honors Readings in Molecular and Cell Biology (3-6 semester hours) For students conducting independent library research for honors theses or projects. Besides the university specifications, the student should contact the undergraduate advisor in biology for program requirements. Topics may vary. May be repeated for credit. Prerequisite: Consent of instructor. ([3-6]-0) S

BIOL 4V99 Senior Honors Research in Molecular and Cell Biology (3-6 semester hours) For students conducting independent research for honors theses or projects. Besides the university specifications, the student should contact the undergraduate advisor in biology for program requirements. Topics may vary. May be repeated for credit. Prerequisite: Consent of instructor. ([3-6]-0) S

Business Administration Course Descriptions

BA 2301 (BUSI 2301) Business and Public Law (3 semester hours) Commercial and administrative law, focusing on the law of contracts, agency, bailments, property, and laws of partnerships and corporations. (3-0) Y

BA 3301 Employment Law (3 semester hours) This course will introduce students to the various legal issues that are involved in the modern employment relationship. The topics covered will include employment contracts, employment-at-will, anti-discrimination laws, occupational health and safety, pay equity, employee privacy, and other relevant topics. Prerequisite: BA 2301 or permission of instructor. (3-0) Y

BA 3310 Entrepreneurial Finance for Non-Business Majors (3 semester hours) This course explores the process of raising capital and managing the capital in entrepreneurial new ventures. The course will focus on the issues of forecasting cash flows, cash flow management, capital budgeting, valuation, capital structure and the various financing methods and mechanisms available to entrepreneurs (bootstrapping, angel investors, venture capitalists, IPOs seeking to raise capital for a new venture). Prerequisite: AIM 2301 and at least sophomore standing or consent of instructor. This course cannot be used to fulfill degree requirements by students in the School of Management. (3-0) Y

BA 3311 Business Communications (3 semester hours) This course introduces students to various types of professional communication, both written and oral. Students practice skills in communication styles such as memos, email, research reports, proposals, presentations, and interviews. Students may receive credit for either BA 3311 or AIM 3311 to fulfill degree requirements. Prerequisites: BA 3351, MATH 1325, RHET 1302. (Same as AIM 3311) (3-0) S

BA 3341 Business Finance (3 semester hours) An introduction to financial decision making and the valuation of business enterprises. The course focuses on the use of discounted cash flow techniques in the selection of capital investment projects. Additional topics include financial planning, exchange rates, risk and return trade-offs in financial markets, financing decisions and dividend policy. Pre/Co-requisite: STAT 3360. Prerequisites: AIM 2301, AIM 2302, MATH 1326, and MATH 2333. (3-0) Y

BA 3345 Introduction to Leading and Managing (3 semester hours) This course will deal with theories and techniques of leadership and management. The course will start with a general overview of major theories on leadership and management. The main focus of this course is on the relationship between individual action and group and organizational performance. A major
highlight of the course will be discussion of how the Motives-Theory-Practice triad is shaping the business world. Prerequisite: BA 3361 and MATH 1326. (3-0) Y

**BA 3351 Introduction to Management Information Systems** *(3 semester hours)* Introduction to basic management information systems using computer concepts and computer applications. Emphasis is on solving problems with computer applications. Computer concepts include computer software, computer hardware, databases, networks, security, mobile computing, and the Internet. Use of word processing, spreadsheet, and database application software to develop PC problem solving skills. Cannot be used to satisfy degree requirements for majors in the School of Engineering and Computer Science. (3-0) S

**BA 3352 Production Management** *(3 semester hours)* Applications of operations research methods to production problems. Production processes in the business firm with emphasis on forecasting, production planning, and production control techniques. Prerequisites: MATH 1326, MATH 2333, and STAT 3360. (3-0) Y

**BA 3360 Managerial Decision Making** *(3 semester hours)* This course introduces the basic concept of quantitative approaches to decision making. It is designed to provide students with a sound conceptual understanding of the role that quantitative models play in helping business people make better decisions. It emphasizes the application of a wide variety of quantitative techniques to the solution of problems in the areas of finance, economics, marketing and operations. The electronic spreadsheet is used as the principal device for building models, and the course covers the concepts of effective spreadsheet design and use. Prerequisite: MATH 1326. (3-0) Y

**BA 3361 Organizational Behavior** *(3 semester hours)* An integrated social science approach to understanding organizational issues. This course explores theories and concepts derived from diverse fields including psychology, sociology, economics and anthropology. The topics include: learning and motivation; attitudes, values and ethics; perception; communication; leadership; group dynamics; decision making; power and politics; conflict and negotiation; and organizational structure. (3-0) S

**BA 3365 Principles of Marketing** *(3 semester hours)* Marketing principles including marketing planning, the decision making environment, market measurement, product decisions, promotion, pricing, and distribution. Special emphasis placed upon the determination and evaluation of market segments. (3-0) S

**BA 3372 Export Market Development** *(3 semester hours)* Survey of factors affecting export markets. Examination of free trade versus strategic trade; trade protectionism; role and influence of the WTO; impact of regional trade agreements (e.g. NAFTA, EU); supply chain management, logistics and distribution challenges; and trade finance. BA 3372 and BA 3374 cannot both be used to satisfy degree requirements. (3-0) Y

**BA 3374 International Marketing** *(3 semester hours)* Analysis of environment of international marketing. Survey of techniques of international marketing management. BA 3372 and BA 3374 cannot both be used to satisfy degree requirements. Prerequisites: BA 3365 and MATH 1326. (3-0) Y

**BA 3390 Quantitative Methods in Finance** *(3 semester hours)* The objective of this course is to develop students' ability to use quantitative methods and software (particularly spreadsheet) in financial decision making. Prerequisites: BA 3341, BA 3351 and STAT 3360. (3-0) S

**BA 4101 Careers in Management** *(1 semester hour)* The primary objective of this course is to provide students with assistance in making effective career decisions. This is accomplished through the use of career assessments, informational interviews, development of a career plan, as well as both practical and theoretical readings and exercises. Students will prepare resumes, develop effective interviewing skills, explore networking, and job search techniques. (1-0) Y

**BA 4199 Senior Honors in Business Administration** *(1 semester hour)* For students conducting independent research for honors theses or projects. Prerequisite: BA 4299. (1-0) S

**BA 4299 Thesis Research Methods and Writing Seminar** *(2 semester hours)* This course will prepare Honors Students to write their Honors Thesis. Various research methods ranging from survey to archival will be discussed. Students will choose a method, pick a research question, and produce an outline and introduction to their thesis topic. Junior standing and permission of the instructor required. (2-0) S

**BA 4305 Strategic Management** *(3 semester hours)* Capstone-level course requiring integration of all fields of business. Students will draw on their broadened awareness of various environmental influences (social and political) to solve business problems. Management alternatives will be examined with an ethical perspective relating policy trends to the strategic planning mode. Pre/Co-requisite: BA 4371. Prerequisites: BA 3341, BA 3351, BA 3352, BA 3361 and BA 3365. (3-0) S

**BA 4307 Corporations, Politics and Society** *(3 semester hours)* Overview of the corporation as a political participant in the American political system. Topics include corporate political action committees, business lobbying, grassroots programs, Federal Election Campaign Act, and labor involvement. (3-0) Y

**BA 4308 Entrepreneurship** *(3 semester hours)* This course explores all aspects of entrepreneurship and the process of creating new ventures. Topics will include the role of entrepreneurship in the economy, opportunity recognition and evaluation, bootstrapping,
entrepreneurial strategies, venture finance, writing a business plan and managing the growth process. Student teams will prepare and present business plans during the semester. Prerequisite: AIM 2300 or AIM 2301. (3-0) Y

**BA 4309 Regulation of Business and Financial Markets (3 semester hours)** This course examines the legal and regulatory environment of business and financial markets. Comparisons between the impact of these laws and their original intent are considered, as well as their ethical dimensions. Prerequisites: ECO 2302 and MATH 1325. (3-0) Y

**BA 4310 Entrepreneurial Finance (3 semester hours)** This course explores the process of raising capital and managing the capital in entrepreneurial new ventures. The course will focus on the issues of forecasting cash flows, cash flow management, capital budgeting, valuation, capital structure and the various financing methods and mechanisms available to entrepreneurs (bootstrapping, angel investors, venture capitalists, IPOs seeking to raise capital for a new venture). Prerequisites: AIM 2301 and BA 3341. (3-0) Y

**BA 4311 Entrepreneurial Strategy (3 semester hours)** This course is designed to show students how to identify potential business opportunities, determine what constitutes a good business model, and to strategically implement a business proposal. Topics of focus include an overview of the entrepreneurial process, determinants of venture success in high tech and other business environments, and strategies for industry entry and venture growth. Prerequisites: AIM 2300 or AIM 2301 and at least sophomore standing. (3-0) Y

**BA 4318 Programming in Visual Basic (3 semester hours)** Business application development using Visual Basic. Topics include fundamental Basic programming, graphical user interface programming, ActiveX and data controls, and integration with other applications such as Access. Prerequisites: BA 3351, MATH 1326, and MATH 2333. (3-0) Y

**BA 4319 Programming in C++ (3 semester hours)** This course will introduce students to concepts in object-oriented programming. Students will develop application programs using C++. Application development using Java will also be introduced. Cannot be used to satisfy degree requirements for majors in the School of Engineering and Computer Science. Prerequisites: BA 4318, MATH 1326, and MATH 2333. (3-0) Y

**BA 4320 Desktop Computing with Applications (3 semester hours)** Use of microcomputer applications for the development of effective business solutions. The primary thrust of this course is to provide students with a strong understanding of Web design principles in the planning, graphics development, publishing, maintaining, and publicizing of a Web site. Business Modeling and applied Business Process analysis will also be covered. Emphasis is placed on using productivity applications to increase productivity in a business environment. Software applications used by students will include a spreadsheet, HTML, presentation/ web graphics, and word processing. Cannot be used to satisfy degree requirements for majors in the School of Engineering and Computer Science. Prerequisites: BA 3351 and MATH 1325. (3-0) S

**BA 4321 Database Fundamentals (3 semester hours)** Database theories, conceptual data modeling techniques, database management, and database development practice with emphasis on relational database systems. Topics include entity-relationship data model, data planning, data administration, SQL, relational theories, distributed databases, database development project, and other database management issues, such as concurrency control, data security, and integrity. A database management system software package is used to implement working database systems. Cannot be used to satisfy degree requirements for majors in the School of Engineering and Computer Science. AIM 3321 and BA 4321 cannot both be used to satisfy degree requirements. Prerequisites: AIM 2301, AIM 2302, BA 3351 and MATH 1325. (Same as AIM 3321) (3-0) Y

**BA 4322 Systems Analysis and Design (3 semester hours)** An overview of systems development methodologies will be presented. In addition to concepts in systems analysis and design, the students will be exposed to concepts in project management, and information gathering techniques. Projects focusing on the use of CASE tools will also be an integral part of the course. Cannot be used to satisfy degree requirements for majors in the School of Engineering and Computer Science. Prerequisites: BA 4321, MATH 1326, and MATH 2333. (3-0) Y

**BA 4323 Business Data Communications (3 semester hours)** IS managers need to have an in-depth understanding of a gamut of issues relating to data communication and distributed processing, including technical, economic, and managerial details. The course will focus on currently observed industry trends, including the digital convergence of voice, video and data, enterprise-wide connectivity, distributed computing environments, and the massive demand for Internet-based open systems. Cannot be used to satisfy degree requirements for majors in the School of Engineering and Computer Science. Prerequisites: BA 3351, MATH 1326 and MATH 2333. (3-0) Y

**BA 4324 Information Systems Management (3 semester hours)** Management of the information technology within an organization is a critical activity. Students will be introduced to issues relating to IT investment, management of IT, and using IT for competitive advantage. Prerequisites: BA 3351, MATH 1326 and MATH 2333. (3-0) Y

**BA 4326 Systems Development Project (3 semester hours)** Students will be required to perform analysis, design, and implementation of a real-life project within an organization. Students will be organized into teams and will be required to use the concepts taught in the earlier classes on systems development. Cannot be used to satisfy degree requirements for majors in the School of Engineering and Computer Science. Prerequisites: BA 4318, BA 4322 and BA 4323. (3-0) Y
BA 4328 Decision Support and Expert Systems (3 semester hours) The course will focus on the design and development of Decision Support and Expert Systems. The development of Intelligent Systems and the role they play in the organization will also be addressed. Prerequisites: BA 4321, MATH 1326, and MATH 2333. (3-0) T

BA 4329 Electronic Commerce (3 semester hours) As an increasing number of business transactions take place using an electronic medium, there is a need for business managers to understand how these new technologies transform the way companies and individuals are doing business. This course offers a general background on electronic commerce and its impact on business. Topics include the evolution of information systems, economics of electronic transactions, Internet marketing, and issues related to virtual organizations. Prerequisites: BA 3351, MATH 1326, and MATH 2333. (3-0) T

BA 4330 Information Technology Security and Audit (3 semester hours) This course provides an overview of common security practices and introduces the concepts related to applied security technologies. Topics include cryptography (encryption and decryption, digital signatures and certificates), risk management (threat analysis, cost benefit analysis), security audit (intrusion detection and security assurance), disaster recovery (contingency planning, incident handling, security training and awareness), network security technologies (firewalls, VPN), security policy (types of policy, implementation considerations, workplace privacy), and E-Commerce security issues (security requirements, hacker techniques, online privacy). Cannot be used to satisfy degree requirements for majors in the School of Engineering and Computer Science. Prerequisite: BA 4323. (3-0) Y

BA 4331 Programming in JAVA (3 semester hours) Business application development using JAVA. Topics include the fundamentals of Java programming, applets programming for web-based systems, and object-oriented programming concepts. Cannot be used to satisfy degree requirements for majors in the School of Engineering and Computer Science. Prerequisites: BA 4318, MATH 1326 and MATH 2333. (3-0) Y

BA 4332 Negotiation and Dispute Resolution (3 semester hours) This course explores the theories, processes and practical techniques of negotiation so that students can successfully negotiate and resolve disputes in a variety of situations including interpersonal and group settings. Emphasis is placed on understanding influence and conflict resolution strategies; identifying interests, issues, and positions of the parties involved; analyzing co-negotiators, their negotiation styles, and the negotiation situations; and managing the dynamics associated with most negotiations. Practical skills are developed through the use of simulations and exercises. Prerequisites: BA 3361 or consent of instructor and MATH 1325. (3-0) Y

BA 4333 Performance Management (3 semester hours) This course presents human and intellectual capital as a sustainable competitive advantage and provides the student with tools to more effectively use human assets to increase productivity. The course explores psychological technologies used to empower and motivate employees, reduce stress in the workplace, and increase emotional intelligence. The technologies are combined with organizational design tools to create high performance workplace environments. Prerequisites: BA 3361 and MATH 1326. (3-0) T

BA 4335 Marketing Research (3 semester hours) This course provides an overview of the entire marketing research process which includes problem definition, research design, use of secondary data, collecting primary data, designing surveys, sampling, fieldwork, basic data analysis, and reporting of findings. Emphasis will be on using market research to make better marketing decisions. Students are expected to know basic marketing and have an aptitude for quantitative analysis. Prerequisites: BA 3365 and STAT 3360. (3-0) Y

BA 4336 Marketing Strategy (3 semester hours) This course provides an overview of how strategy is developed in marketing. This course emphasizes the integration of knowledge from previous marketing courses and related disciplines. Topics include planning and development of policies, implementation and evaluation of the entire marketing strategy. Case analyses and/or simulation games are employed. Prerequisites: BA 3365, MATH 1326 and MATH 2333. (3-0) Y

BA 4337 Product and Brand Management (3 semester hours) This course discusses concepts and cases of planning, building, measuring and management of brands and products. It covers topics such as new product development, branding, brand equity, product and service quality, brand positioning, perceptual mapping, long term brand management, and the product life cycle. Prerequisites: BA 3365, MATH 1326 and MATH 2333. (3-0) Y

BA 4338 Sales and Distribution Management (3 semester hours) This course covers professional selling practices and sales management (including functions, evaluation, and compensation of sales force), as well as wholesaling and retailing (including positioning, merchandising, inventory, pricing, buying, advertising, promotion, services and customer satisfaction), and channel management (design, functions, logistics, supply chain and channel relationships). Prerequisites: BA 3365, MATH 1326 and MATH 2333. (3-0) Y

BA 4339 Advertising (3 semester hours) Examine the principles and practice of Advertising, PR and Promotions. Topics include: the role of the ad agency; the advertising plan based on marketing, research, and consumer behavior; Integrated Marketing Communications; communication goals and measurement, advertising, budgeting, advertising buying, media planning, media scheduling, and art, copy, creativity and production of ads in different media. We also discuss social, ethical and legal issues in advertising. Prerequisites: BA 3365, MATH 1326 and MATH 2333. (3-0) Y
BA 4345 Financial Markets and Institutions (3 semester hours) Examines the operation of financial markets and financial intermediaries, along with their role in providing financing to the corporate and public sectors of the economy. The objective of this course is to provide detailed knowledge of a variety of financial instruments and the markets in which they trade. Topics covered include the banking system, the markets for short-term securities, financial derivatives, and the market for foreign exchange. Prerequisite: BA 3341. (3-0) S

BA 4346 Investment Management (3 semester hours) Examines a wide range of issues concerning the management risk and the measurement of investment performance. The objective of the course is to provide an understanding of the role of modern financial theory in portfolio management and to present a framework for addressing a wide range of issues in the management of financial assets. The topics covered include valuation, the measurement of risk and portfolio performance, the management of portfolios of fixed income securities, and derivative securities. Prerequisite: BA 3390 and STAT 3360. (3-0) S

BA 4347 Applied Corporate Finance (3 semester hours) Integrates a variety of advanced topics in corporate financial decision making in examining the development of the financial strategy of the firm. Emphasis will be placed on the valuation of the firm and the impact of financial markets on corporate investment and financing decisions. Prerequisite: BA 3390. (3-0) Y

BA 4348 Options and Futures Markets (3 semester hours) Examines the valuation of derivative securities such as options and futures contracts, as well as the use of these instruments in managing business and financial risks. The topics to be covered include the pricing of futures contracts, swaps, and options, as well as the use of derivative instruments in hedging, portfolio insurance, and exotic options. Prerequisite: BA 4346. (3-0) Y

BA 4349 Management of Financial Institutions (3 semester hours) Study of the financial management of commercial banks and other financial intermediaries. Emphasis will be given to the analysis of financial performance, lending decisions, asset-liability management, and the management of institutional capital requirements. Additionally, strategic considerations such as evolving information technology, the changing regulatory environment and the impact of global competition in financial services will be examined. Prerequisite: BA 3390. (3-0) Y

BA 4350 Personal Financial Management and Planning (3 semester hours) Application of the principles of financial management to lifetime consumption and retirement planning. Emphasizes the integration of personal savings and investment decisions with life insurance programs and estate planning. Topics covered include the role of property, health, life insurance; tax-deferred investment vehicles, as well as fixed income and equity investment alternatives such as mutual funds. Prerequisite: BA 4346. (3-0) Y

BA 4354 Insurance and Risk Management (3 semester hours) Study of different types of insurance products and associated risk management issues. Prerequisite: BA 3390. (3-0) Y

BA 4355 E-Business Technologies and Web Applications (3 semester hours) The objective of this class will be to gain an understanding of the Information Technologies (IT) that support and drive E-business and E-business applications. The emphasis in the class will be on the IT architecture of an E-business. Specifically we will study technologies that underlie the Internet and Web, together with client-side and server-side computing. Cannot be used to satisfy degree requirements for majors in the School of Engineering and Computer Science. Prerequisites: BA 4318 and BA 4321. (3-0) Y

BA 4356 Enterprise Resource Planning (3 semester hours) The objective of this course is to introduce the concept of Enterprise Resource Planning and to understand the issues in the selection and implementation of ERP software. There will also be a discussion on the architectural issues involved in executing a client-server application. Students will get hands-on experience with available ERP software and learn about implementation issues that arise in real organizations. Cannot be used to satisfy degree requirements for majors in the School of Engineering and Computer Science. Prerequisites: BA 3351, MATH 1326, and MATH 2333. (3-0) Y

BA 4360 Cases in Personal Financial Planning (3 semester hours) Case studies involving different personal financial planning issues. Prerequisites: AIM 3351, BA 4350, and BA 4354 or permission of the instructor. (3-0) T

BA 4361 International Finance Management (3 semester hours) Study of world financial markets and institutions, foreign exchange exposure and management, foreign direct investment, and issues involved in the financial management of multinational firms. Prerequisite: BA 3341. (3-0) Y

BA 4366 Introduction to Supply Chain Management (3 semester hours) This course introduces the key players and challenges in a supply chain (SC). Type of facilities, inventory and transportation options, and the role of information in running SCs are discussed. The objectives of different players in SCs are laid out and contrasted with each other. This motivates the discussion of integration/coordination of the players, a central theme in SC management. Operations and tradeoffs in service supply chain (i.e., air/sea lines, health care, hotels, and restaurants) are examined. Prerequisite: BA 3352. (3-0) Y

BA 4367 Introduction to Project Management (3 semester hours) Project management is concerned with the management and control of a group of interrelated tasks required to be completed in an efficient and timely manner for the successful accomplishment of the objectives of an overall project. Since each project is usually unique in terms of task structure, risk
characteristics and objectives, the management of projects is significantly different from the management of repetitive processes designed to produce a series of similar products or services. Large-scale projects are characterized by a significant commitment of organizational and economic resources coupled with a high degree of uncertainty. The objective of this course is to enhance the ability of participants to respond to the challenges of large-scale projects so that they can be more effective as project managers. We study in detail up-to-date concepts, models, and techniques useful for the evaluation. Prerequisite: BA 3352. (3-0) Y

BA 4368 Lean and Six Sigma Processes (3 semester hours) Six Sigma is a disciplined, data-driven methodology for eliminating defects in any process, including manufacturing and service operations. Lean manufacturing/service focuses on improving the speed of a process and the elimination of waste, primarily by reducing non-value-added steps. The concept of Six Sigma deals with the inefficiencies/waste caused by defects, overproduction, and extra processing. Topics covered include concepts and theory of quality control in manufacturing and service operations, analysis of product design and process capability, and statistical process control. In this course, students will develop a broad understanding of Lean and Six Sigma principles and practice, and acquire knowledge about Lean and Six Sigma initiatives in manufacturing/service operations. Prerequisite: BA 3352. (3-0) Y

BA 4369 Integrated SCM Information Systems (3 semester hours) This course will introduce the concept of an integrated supply chain management system such as SAP’s Enterprise Resource Planning System. Students will: 1) learn the elements of an ERP application, 2) understand the concepts of end-to-end supply chain management, 3) define the basic master data needed to create a supply chain plan, 4) forecast demand using several statistical methods, 5) plan inventories using MRP and re-order point techniques, 6) execute the supply chain plan through the production process, 7) view the completed inventories after production. Prerequisites: BA 3352 and BA 4366 or permission of the instructor. (3-0) Y

BA 4371 International Business (3 semester hours) Examination of worldwide patterns of trade and investment. Overview of financial, managerial, and marketing problems confronted by multinational firms. Prerequisites: BA 3365, MATH 1326 and MATH 2333. Pre/Corequisite: BA 3341. (3-0) S

BA 4372 International Organizational Behavior and Human Resource Management (3 semester hours) The course examines cultural complexity in the uncontrollable business environments in foreign markets. The course covers management of problems derived from cultural differences, the lack of adaptability of expatriates and their families in host countries, and recruitment, training and motivation for international assignments. Prerequisites: BA 3361, MATH 1326 and MATH 2333. (3-0) Y

BA 4373 Global Strategy (3 semester hours) Study of the challenges that multinational firms face, including managing across national borders, managing international strategic alliances, managing headquarters-subsidiary relationships, and developing global capabilities. Prerequisites: BA 4371, MATH 1326 and MATH 2333. (3-0) Y

BA 4380 Effective Management in Today’s Business Environment (3 semester hours) This course focuses on the successes and failures of enterprises and the people who run them. We examine the essential elements of leadership in businesses that either lead to sustainable competitive advantage or take the company into crisis and decline. Prerequisites: BA 3311 or permission of the instructor, and BA 3361. (3-0) Y

BA 4V81 Business Administration Individual Study in Decision Sciences (1-3 semester hours) May be repeated for credit as topics vary (9 hours maximum). ([1-3]-0) R

BA 4V82 Business Administration Individual Study in Finance (1-3 semester hours) May be repeated for credit as topics vary (9 hours maximum). ([1-3]-0) R

BA 4V83 Business Administration Individual Study in Marketing (1-3 semester hours) May be repeated for credit as topics vary (9 hours maximum). ([1-3]-0) R

BA 4V84 Business Administration Individual Study in Organizational Strategy and International Management (1-3 semester hours) May be repeated for credit as topics vary (9 hours maximum). ([1-3]-0) R

BA 4V90 Management Internship (1-3 semester hours) This course is designed to further develop a student’s business knowledge through appropriate developmental work experiences in a real business environment. Students are required to identify and submit specific Business Learning Objectives (Goals) at the beginning of the semester. At the end of the semester students must prepare an oral presentation, reflecting on the knowledge gained in the work experience. Student performance is evaluated by the work supervisor. May be repeated for credit (6 hours maximum). ([1-3]-0) S

BA 4V91 Seminar Series in Decision Sciences (1-3 semester hours) Discussion of selected topics and theories in the decision sciences. May be repeated for credit as topics vary (9 hours maximum). ([1-3]-0) R

BA 4V92 Seminar Series in Finance (1-3 semester hours) Discussion of selected topics and theories in finance. May be repeated for credit as topics vary (9 hours maximum). ([1-3]-0) R

BA 4V93 Seminar Series in Marketing (1-3 semester hours) Discussion of selected topics and theories in marketing. May be repeated for credit as topics vary (9 hours maximum). ([1-3]-0) R
BA 4V94 Seminar Series in Organizational Behavior, Strategy and International Management (3 semester hours) Discussion of selected topics and theories in organizational behavior, strategy and international management. May be repeated for credit as topics vary (9 hours maximum) ([1-3]-0) R

BA 4V95 Seminar Series in Information Systems (1-3 semester hours) Discussion of selected topics and theories in information systems. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: BA 4318. ([1-3]-0) R

BA 4V96 Seminar Series in Operations Management (1-3 semester hours) Discussion of selected topics and theories in operations management. May be repeated for credit as topics vary (9 hours maximum) ([1-3]-0) R

Special Topics

Business Administration

BA 4V00 Special Topics (1-3 semester hours) May be lecture, readings, or individualized study. May be repeated for credit as topics vary (9 hours maximum). (Same as ATEC 4340 when topic is Issues in Arts and Technology) ([1-3]-0) S

Chemistry Course Descriptions

CHEM 1011 General Chemistry I Recitation (0 semester hours) Introduces concepts and demonstrates techniques that will be covered in CHEM 1111 laboratory. Corequisites: CHEM 1013, CHEM 1111, and CHEM 1311. (0-0) S

CHEM 1012 General Chemistry II Recitation (0 semester hours) Introduces concepts and demonstrates techniques that will be covered in CHEM 1112 laboratory. Corequisites: CHEM 1014, CHEM 1112, and CHEM 1312. (0-0) S

CHEM 1013 General Chemistry I Exams (0 semester hours) Hour exams for CHEM 1311. Corequisites: CHEM 1011, CHEM 1111, and CHEM 1311. (0-0) S

CHEM 1014 General Chemistry II Exams (0 semester hours) Hour exams for CHEM 1312. Corequisites: CHEM 1012, CHEM 1112, and CHEM 1312. (0-0) S

CHEM 1111 (CHEM 1111) General Chemistry Laboratory I (1 semester hour) Introduction to the chemistry laboratory. Experiments are designed to demonstrate concepts covered in CHEM 1311; including properties and reactions of inorganic substances and elementary qualitative and quantitative analysis. Corequisites: CHEM 1011, 1013, and CHEM 1311. (0-3) S

CHEM 1112 (CHEM 1112) General Chemistry Laboratory II (1 semester hour) A continuation of CHEM 1111 demonstrating the concepts covered in CHEM 1312, including acid base chemistry, reaction kinetics, electrochemistry, polymers, and organic synthesis. Prerequisite: CHEM 1111 or 1115. Corequisites: CHEM 1012, 1014, and CHEM 1312. (0-3) S

CHEM 1115 Honors Freshman Chemistry Laboratory I (1 semester hour) This course and its follow on (CHEM 1116) reinforce the concepts of Freshman Chemistry via experiments. Students are offered the opportunity to acquire basic laboratory skills and an appreciation for the presence of chemistry in daily living through a combination of laboratory and computer experiments and applied research modules. Corequisite: CHEM 1315. (0-6) Y

CHEM 1116 Honors Freshman Chemistry Laboratory II (1 semester hour) A continuation of CHEM 1115. This course reinforces concepts presented in CHEM 1316. Prerequisite: CHEM 1115. Corequisite: CHEM 1316. (0-6) Y

CHEM 1311 (CHEM 1311) General Chemistry I (3 semester hours) Introduction to elementary concepts of chemistry theory. The course emphasizes chemical reactions, the mole concept and its applications, and molecular structure and bonding. Corequisites: CHEM 1011, CHEM 1013 and CHEM 1111. (3-0) S

CHEM 1312 (CHEM 1312) General Chemistry II (3 semester hours) A continuation of CHEM 1311 treating metals; solids, liquids, and intermolecular forces; chemical equilibrium; electrochemistry; organic chemistry; rates of reactions; and environmental, polymer, nuclear, and biochemistry. Prerequisite: CHEM 1311 or 1315. Corequisites: CHEM 1012, CHEM 1014, and CHEM 1112. (3-0) S

CHEM 1315 Honors Freshman Chemistry I (3 semester hours) An advanced course dealing with the principles of structure and bonding and the physical laws that govern the interactions of molecules. The course is intended for students who have a solid background in chemistry at the secondary level and the desire to explore general chemistry concepts more deeply. Corequisite: CHEM 1115. (3-0) Y
CHEM 1316 Honors Freshman Chemistry II (3 semester hours) A continuation of the presentation of concepts begun in CHEM 1315. This course will present advanced topics including those in organic, biochemistry, and environmental chemistry. Prerequisite: CHEM 1315 or consent of instructor. Corequisite: CHEM 1116. (3-0) Y

CHEM 2023 Introductory Organic Chemistry Laboratory I Recitation (0 semester hours) Introduces concepts and demonstrates techniques that will be covered in CHEM 2123 laboratory. Corequisites: CHEM 2123 and CHEM 2323. (0-0) S

CHEM 2025 Introductory Organic Chemistry Laboratory II Recitation (0 semester hours) Introduces concepts and demonstrates techniques that will be covered in CHEM 2125 laboratory. Corequisites: CHEM 2125 and CHEM 2325. (0-0) S


CHEM 2125 (CHEM 2125) Introductory Organic Chemistry Laboratory II (1 semester hour) Continuation of Organic Chemistry Laboratory I. Prerequisites: CHEM 2223 and 2123. Corequisite: CHEM 2225. (0-4) S

CHEM 2323 (CHEM 2323) Introductory Organic Chemistry I (3 semester hours) The covalent bond. Organic chemistry: aliphatic and aromatic compounds; covalent inorganic and organometallic compounds; a survey of the organic functional groups and their typical reactions; stereochemistry. The first course in organic chemistry. Satisfies the basic organic chemistry lecture requirements for pre-health profession students. Prerequisite: CHEM 1312 or 1316. Corequisites: CHEM 2223 and CHEM 2123. (3-0) S


CHEM 2401 (CHEM 2401) Introductory Quantitative Methods in Chemistry (4 semester hours) A study of the theory, applications, and calculations involved in the methods of analysis. Theory and practice of volumetric, gravimetric, and spectrophotometric methods. Prerequisites: CHEM 1312 and 1112. (2-6) Y

CHEM 2V01 Topics in Chemistry (1-3 semester hours) Subject matter will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: Consent of instructor (1-3-0) R

CHEM 2V95 Individual Instruction in Chemistry (1-3 semester hours) Individual study under a faculty member’s direction. May be repeated for credit as topics vary (9 hours maximum). Consent of instructor required. (1-3-0) R

CHEM 3321 Physical Chemistry I (3 semester hours) Fundamental properties of macroscopic biophysical chemical systems are introduced and described in quantitative terms. A core of topics in thermodynamics, molecular motion, kinetics, molecular distributions and statistical thermodynamics is supplemented with topics germane to students taking physical chemistry with biophysical applications. Prerequisites: CHEM 2325 and MATH 2451, or consent of instructor (CHEM 3361 is recommended). (3-0) Y

CHEM 3322 Physical Chemistry II (3 semester hours) Fundamental microscopic properties of matter and radiation are discussed. A core of topics including quantum chemistry, atomic and molecular structure and spectroscopy, non-bonded interactions, and computational chemistry is supplemented with topics germane to students taking physical chemistry with biophysical applications. Prerequisites: CHEM 3321 and MATH 2451, or consent of instructor. (3-0) Y

CHEM 3341 Inorganic Chemistry I (3 semester hours) Survey of inorganic chemistry with emphasis on the modern concepts and theories of inorganic chemistry including electronic and geometric structure of inorganic compounds. Topics address contemporary physical and descriptive inorganic chemistry. Prerequisites: CHEM 2323 and CHEM 2325, or equivalent. (3-0) Y

CHEM 3361 Biochemistry I (3 semester hours) Structures and chemical properties of amino acids; protein purification and characterization; protein structure and thermodynamics of polypeptide chain folding; catalytic mechanisms, kinetics, and regulation of enzymes; energetics of biochemical reactions; carbohydrate structure and metabolism; the citric acid cycle, electron transport mechanisms and oxidative phosphorylation. Prerequisites: CHEM 2323 and 2325 or equivalent. Co-requisite: BIOL 3161. (Same as BIOL 3361) (3-0) Y

CHEM 3362 Biochemistry II (3 semester hours) Membrane structure and function; glycogen metabolism, gluconeogenesis, and pentose pathway; lipid structure and metabolism; amino acid metabolism; photosynthesis; nucleic acid structure and metabolism; sequencing and genetic engineering; replication, transcription, and translation; chromosome structure. Prerequisite: BIOL/CHEM 3361, or consent of instructor. Co-requisite: BIOL 3162. (Same as BIOL 3362) (3-0) Y

CHEM 3471 Advanced Chemical Synthesis Laboratory (4 semester hours) Careful handling practices and controlled variation of reaction parameters to obtain high yield syntheses. Use of standard separation techniques and spectrophotometric methods to identify reaction products and assess their purity. Prerequisite: CHEM 2125 and CHEM 3472 or consent of instructor. (1-7) Y
CHEM 3472 Instrumental Analysis (4 semester hours) Basic processes, instrumentation and applications of ultraviolet, visible, fluorescence, atomic and mass spectroscopy, electrochemistry, surface and microanalysis, and separations. Emphasis will be placed upon acquisition, treatment, and interpretation of data and report writing. Prerequisite: CHEM 2401. (2-6) Y

CHEM 3V92 Undergraduate Research in Biochemistry (2-6 semester hours) Students will pursue an independent project under the supervision of a member of the Chemistry, Biology or U. T. Southwestern faculty. May be repeated for credit (9 hours maximum). Prerequisite: Consent of instructor. (Same as BIOL 3V93) ([2-6]-0) S

CHEM 4335 Polymer Chemistry (3 semester hours) Macromolecules. Synthesis, structure, and properties of polymers. Polymer-polymer and polymer-solvent interactions. Applications in industry and biochemistry. Prerequisite: CHEM 3321 or consent of instructor (CHEM 3322 recommended). (3-0) Y

CHEM 4355 Computational Modeling (3 semester hours) This course will introduce students to computational modeling approaches commonly used to tackle chemical and biophysical problems. Prerequisites: CHEM 3321 and MATH 2451, or consent of instructor. (3-0) Y

CHEM 4381 Environmental Chemistry (3 semester hours) This course encompasses the study of the sources, reactions, transport, effects, and fates of chemical species in water, soil, and air environments and the effects of technology thereon. Prerequisite: CHEM 2325 or consent of instructor. (3-0) T

CHEM 4390 Research and Advanced Writing in Chemistry (3 semester hours) For students conducting independent research and scientific writing. Students will pursue an independent project under the supervision of a member of the Chemistry faculty. Subject and scope to be determined on an individual basis. This course satisfies the university advanced writing requirement. Prerequisites: Senior in chemistry, consent of supervising faculty and filing a research plan approved by supervising faculty and the Undergraduate Committee in Chemistry prior to the 12th class day. (3-0) S

CHEM 4399 Research and Advanced Writing in Chemistry for Honors Students (3 semester hours) For students conducting independent research for honors theses or projects. Satisfies the university advanced writing requirement. Prerequisites: Senior in chemistry, consent of supervising faculty and filing a research plan approved by supervising faculty and the Undergraduate Committee in Chemistry prior to the 12th class day. (3-0) S

CHEM 4473 Physical Measurements Laboratory (4 semester hours) Modules may include topics in physical chemistry and biophysics such as bio-nanotechnology, calorimetry, centrifugation, computational methods, computer-instrument interfaces, electrochemistry, electronics, kinetics, literature skills, property of matter, spectroscopy, and statistical methods. Prerequisites: CHEM 3472 and CHEM 3321, or consent of instructor. (1-7) Y

CHEM 4V01 Topics in Chemistry (1-9 semester hours) Subject matter will vary from semester to semester. Examples would include, as required, bioorganic chemistry, industrial processes, applied spectroscopy, drugs and people, practical analysis, or other topics that span several subdisciplines. May be repeated for credit (9 hours maximum). Prerequisite: Consent of instructor. ([1-9]-0) R

CHEM 4V91 Research in Chemistry (2-6 semester hours) Students will pursue an independent project under the supervision of a member of the Chemistry faculty. May be repeated for credit (12 hours maximum). Prerequisites: Consent of supervising faculty. ([2-6]-0) S

Child Learning and Development Course Descriptions

CLDP 3194 Research and Evaluation Laboratory (1 semester hour) Laboratory that accompanies CLDP 3394. Student gains hands-on experience in research design, computer data analysis, and report writing. Must co-enroll in CLDP 3394. (0-3) S

CLDP 3303 Normal Language Development (3 semester hours) The development of language and communication, including phonology, syntax, semantics, and pragmatics, with emphasis on theories and historical perspectives. (Same as SPAU 3303) (3-0) S

CLDP 3310 Child Development (3 semester hours) Introduction to psychological theory and research on physical, cognitive, social and emotional development from birth to adolescence. Credit given for only one of CLDP/PSY 3310 or CLDP/PSY 4334. (Same as PSY 3310) (3-0) Y

CLDP 3332 Social and Personality Development (3 semester hours) The study of the forces affecting the socialization of children. Emphasis is placed on children’s interactions with others and how this influences their development in such areas as self-concept, identity, and morality. Prerequisite: CLDP/PSY 3310, 3339, or 4334. (Same as PSY 3332) (3-0) S

CLDP 3336 Infancy (3 semester hours) Examines the period of human life between birth and the onset of language. While attention is given to evidence for the genetic endowment of humans, the main focus is the role of the environment in development
and on the long-term consequences of particular patterns of development in infancy. Daycare and its effects are discussed. Prerequisite: CLDP/PSY 3310, 3339, or 4334. (Same as PSY 3336) (3-0) R

**CLDP 3338 Adolescence** *(3 semester hours)* Covers physical, cognitive, and socioemotional development of adolescents. Topics include puberty, identity development, family processes, peers, schools, achievement and adolescent problems. (Same as PSY 3338) (3-0) Y

**CLDP 3339 Educational Psychology** *(3 semester hours)* This course introduces the psychological theories and research underlying various teaching strategies and provides a framework for understanding student cognitive and motivational development. Emphasis will be on applications in actual teaching behavior. (Same as ED/PSY 3339) (3-0) S

**CLDP 3342 Exceptional Children** *(3 semester hours)* Examines the characteristics of exceptional children and their education, including children with disabilities (learning, emotional/behavioral, communication and physical) as well as those who are gifted. The causes and assessment of exceptionality are examined, along with educational and social policy considerations. Prerequisite: CLDP/PSY 3310, 3339, or 4334. (Same as PSY 3342 and SPAU 4325) (3-0) S

**CLDP 3343 Children in a Changing World** *(3 semester hours)* Issues relevant to childhood in the 20th century. Topics include day care, divorce, parenting styles, and parental leave. The influence of social policy, socioeconomic factors, and family structure on childrearing will be discussed. (3-0) Y

**CLDP 3362 Cognitive Development** *(3 semester hours)* A contrast of Piagetian, behaviorist, and information-processing approaches to the development of cognitive processes throughout childhood. Prerequisite: CLDP/PSY 3310, 3339, or 4334. (Same as PSY 3362) (3-0) S

**CLDP 3365 Child Learning** *(3 semester hours)* Examines the nature of child learning and implications for improving the teaching and learning process. Major theories and research on conditioning paradigms, learning and remembering, attention, knowledge representation and retrieval, and problem solving. Illustrations of how those processes relate to teaching and the acquisition of expertise in content areas such as reading, mathematics, and science. Child assessment, identification of learning styles, and tests and measurements are also considered. Prerequisite: CLDP/PSY 3310, 3339, or 4334. (3-0) Y

**CLDP 3366 Motivation and Achievement** *(3 semester hours)* Examines theories and research on achievement and achievement motivation. Topics include methods of assessing school achievement, theories of achievement motivation, sociocultural and situational influences. Also explores classroom applications. Prerequisite: CLDP/PSY 3339. (Same as PSY 3366) (3-0) Y

**CLDP 3394 Research and Evaluation Methods** *(3 semester hours)* Students gain experience in all phases of behavior science research, including study design, measurement, sampling, data collection, data analysis, and report writing. The course covers the fundamental concepts of the psychometrics of measurement and testing, as well as foundations of experimental and non-experimental designs in research and evaluation. Prerequisite: PSY 2317 or STAT 1342. Must co-enroll in CLDP 3194. (3-0) S

**CLDP 4308 Language Disorders in Children** *(3 semester hours)* Language impairment in children, including etiology, characteristics, and treatment procedures with special emphasis on factors that interfere with normal development of language skills. Prerequisite: CLDP/SPAU 3303 or consent of instructor. (Same as SPAU 4308) (3-0) Y

**CLDP 4334 Lifespan Development** *(3 semester hours)* Covers physical, cognitive, and socioemotional development throughout the human life span. Topics include development of the brain, information processing, self development, attachment family processes, and aging. Credit given for only one of CLDP/PSY 3310 or CLDP/PSY 4334. (Same as PSY 4334) (3-0) S

**CLDP 4344 Child Psychopathology** *(3 semester hours)* Present various views of clinical issues in childhood from sociological, anthropological, and psychological perspectives. Historical views of children are examined in terms of the evolution of current perspectives in childhood psychopathology. Prerequisite: CLDP/PSY 3310, 3339, or 4334. (Same as PSY 4344) (3-0) Y

**CLDP 4345 Violence in the Family** *(3 semester hours)* Explores the area of family violence with primary emphasis on the problems of spouse abuse and child abuse. Analysis of each of these areas of family violence focuses specifically on the epidemiology of the problem, characteristics of the families, etiological theories, and treatment approaches. (Same as PSY 4345) (3-0) Y

**CLDP 4347 Marriage and Family Psychology** *(3 semester hours)* Examines family life styles from sociopsychological viewpoint with stress on personal awareness, growth and satisfaction in interpersonal relations. Research topics include dating, mate selection, communication, sexual adjustment, parenting, cohesion and adaptability, and divorce. (Same as PSY 4347) (3-0) Y

**CLDP 4375 Honors Seminar** *(3 semester hours)* A course for students who conduct undergraduate thesis research in the School of Behavioral and Brain Sciences. The seminar explores the different types of thesis research, current research opportunities in the school, and appropriate techniques for writing the thesis proposal and final thesis report. Broader issues of professional development are also explored. Permission of Associate Dean required. This course is required for all students seeking School Honors (minimum GPA of 3.4 and 30 hours at UTD). (Same as CGS 4375, NSC 4375, PSY 4375, and SPAU 4375) (3-0) Y
Special Topics
Topics under the following course numbers vary from semester to semester. The class schedule for the current semester will list the special topic that will be offered.

CLDP 4V90 Special Topics in Child Learning and Development (1-6 semester hours) Topics vary from semester to semester. The class schedule for the current semester will list the special topic that will be offered. May be repeated for credit as topics vary (9 hours maximum). (Same as CGS 4V90, NSC 4V90, PSY 4V90, and SPAI 4V90) (1-6-0) R

Independent Study
The following independent study courses are advanced individualized learning experiences to be arranged with a supervising professor or course coordinator. Open only to qualified students by consent of instructor. Students must make appropriate arrangements with the professor or coordinator prior to the beginning of the semester (preferably at least six weeks ahead). Permission forms are available in the Associate Dean’s office. Students may enroll in no more than a total of 6 semester credit hours of Independent Study courses during one semester, and may take as Independent Study a maximum of 20 percent of the total hours of course work undertaken at U.T. Dallas, or 12 semester credit hours, whichever is smaller.

CLDP 4394 Internship (3 semester hours) Students earn course credit for field experience in an applied setting. Requires working at least 8 hours per week at an approved community agency or business of the student’s choice. Students keep daily job diaries, attend one class meeting per month, and write brief papers relevant to their experiences. Open to students in good academic standing with a GPA of at least 2.50 who have reached junior or senior standing (more than 53 hours). Apply for placements on the BBS website. Graded Credit/No Credit only. (Same as CGS 4394, NSC 4394, PSY4394 and SPAU 4396,) (3-0) S

CLDP 4395 Co-op Fieldwork (3 semester hours) Students earn course credit for field experience in an approved business or government setting. Requires working at least 8 hours per week. Students will keep a journal of their workplace experience, maintain contact with the instructor, and prepare a written report that focuses on the accomplishments and insights gained through their co-op experience. Credit will not be awarded retroactively. Graded Credit/No Credit only. (Same as CGS/PSY 4395) (3-0) Y

CLDP 4397 Honors Thesis (3 semester hours) An independent study in which the student writes an honors thesis under faculty supervision. Permission of instructor and Associate Dean required. (3-0) S

CLDP 4V96 Teaching Internship (1-3 semester hours) Students work individually with faculty member in preparing and presenting course materials and tutoring students. Must have completed the relevant course with a grade of at least B and have a U.T. Dallas GPA of at least 3.00. Permission of instructor and Associate Dean required. Taken on a Credit/No Credit basis. Can be repeated for a total of 6 semester hours. (1-3-0) S

CLDP 4V98 Directed Research (1-3 semester hours) Student assists faculty with research projects or conducts a research project under weekly faculty supervision. Taken on a Credit/No Credit basis. May be repeated for credit (6 hours maximum). (1-3-0) S

CLDP 4V99 Individual Study (1-3 semester hours) Student studies advanced topics under weekly faculty direction and writes a paper turned in to the Associate Dean. Graded Credit/No Credit only. May be repeated for credit (6 hours maximum). (1-3-0) S

Cognitive Science Course Descriptions

CGS 2301 Cognitive Science (3 semester hours) An introduction to the study of the brain and behavior from the point of view of cognitive science, including approaches from psychology, philosophy, neuropsychology, and computational modeling. Includes phenomena involving sensory systems, memory, decision making, language, and communication. (3-0) Y

CGS 3325 Historical Perspectives on Psychology: Mind and Machines since 1600 (3 semester hours) Basic frames of reference in 20th-century psychology and their historical development in Western thought since 1600 with an emphasis on issues involved with minds, brains, and machines. Includes behaviorism, learning theory, artificial intelligence, gestalt, structural and cognitive approaches. Prerequisite: PSY 2301 or CGS 2301. (Same as PSY 3360) (3-0) Y

CGS 3340 Empirical Methods in Cognitive Science (3 semester hours) Laboratory experience in designing and conducting empirical investigations in cognitive science, with a major emphasis on writing research reports. (This course fulfills the advanced
writing requirement for Cognitive Science majors and 3 hours of the Communication component of the Core Curriculum).
Prerequisite: PSY 3392 or PSY 3490. (Same as PSY 3393) (3-0) R

CGS 3342 Cognitive and Neural Modeling Laboratory (3 semester hours) Auto-associative, associative, competitive learning, recurrent, and back-propagation artificial neural network algorithms in a “hands-on” micro-computer laboratory environment using special simulation software. Applications to perceptual, cognitive, computational, and neuroscience problems. Linear Algebra (MATH 2419) and Computer Programming experience are recommended but not required. (3-0) T

CGS 3361 Cognitive Psychology (3 semester hours) Theory and research on perception, learning, thinking, psycholinguistics, and memory. (Offered in the spring semester) Prerequisite: PSY 2301 or CGS 2301. (Same as PSY 3361) (3-0) R

CGS 4312 Computational Models of Language Understanding (3 semester hours) Probabilistic-based methods for natural language understanding using the MATLAB programming language. (3-0) T

CGS 4313 Neural Net Mathematics (3 semester hours) Vector calculus and vector calculus-based probability theory with artificial neural network modeling applications. Intended to provide mathematics preparation for CGS 4314 and CGS 4315. Prerequisites: Either (1) Linear algebra, multivariable calculus, STAT 4351 or EE 3341, CGS 3342, or (2) consent of instructor. (3-0) T

CGS 4314 Intelligent Systems Analysis (3 semester hours) Mathematical tools for investigating the asymptotic behavior of both deterministic and stochastic nonlinear dynamical systems for the purposes of building computational models in the fields of neuroscience, psychology, and artificial intelligence. Topics include: artificial neural network architectures, Lyapunov stability theory, nonlinear optimization theory, stochastic approximation theory, and the Gibbs Sampler. Prerequisite: CGS 4313 or equivalent or consent of instructor. (Same as CS 4314) (3-0) T

CGS 4315 Intelligent Systems Design (3 semester hours) Mathematical tools for the design and evaluation of artificially intelligent deterministic and stochastic nonlinear dynamical systems for the purposes of building computational models in the fields of neuroscience, psychology, and artificial intelligence. Topics include: (1) Markov Random Field probability representations, and (2) asymptotic mathematical statistical theory for: parameter estimation, model selection, and hypothesis testing. Prerequisite: CGS 4314 or consent of instructor. (Same as CS 4315) (3-0) T

CGS 4352 Human Computer Interactions I (3 semester hours) Methods and principles of human-computer interaction (HCI), user-centered design (UCD), and usability evaluation. Provides broad overview of HCI and how HCI informs UCD processes throughout product development lifecycle. (Same as CS 4352) (3-0) T

CGS 4353 Human Computer Interactions II (3 semester hours) Detailed exploration of human-computer interaction (HCI) through readings in journal articles and research reports. Practical experience in methodology typically used in the design of usable systems. Prerequisite: CGS 4352 or consent of the instructor. (Same as CS 4353) (3-0) T

CGS 4355 Human Computer Interactions Lab (3 semester hours) Provides students with resources to learn and perform hands-on lab-based techniques such as usability testing and cognitive walkthroughs. Pre- or corequisite: CGS 4352 or CGS 4353, or consent of instructor. (3-0) T

CGS 4359 Cognitive Neuroscience (3 semester hours) Examines how modern cognitive neuroscientists explore the neural underpinnings of perception, memory, attention, language and emotion. Investigates how the brain-bases of these functions are uncovered by ingenious observations of clinical populations (including brain-damaged and schizophrenic patients), animal and human electrophysiological techniques, and powerful new functional neuroimaging tools. Prerequisite: PSY/CGS 3361 or CGS 2301. (Same as NSC 4359 and PSY 4359) (3-0) Y

CGS 4362 Perception (3 semester hours) Considers the processes by which the individual gathers information from the external world, the physiological basis of those processes, and how they develop throughout the life span of the individual. Pre- or corequisite: CGS 4361 or PSY 3361. (Same as PSY 4362) (3-0) Y

CGS 4364 Attention and Memory (3 semester hours) Factors influencing the capacity to pick up, organize, and remember complex information. Prerequisite: PSY/PSY 3361, or consent of instructor. (3-0) T

CGS 4368 Computational Neuroscience (3 semester hours) Introduction to state-of-the-art computer methods for simulation of biologically realistic neuronal dynamics. Prerequisite: NSC 4356. (Same as NSC 4368) (3-0) R

CGS 4375 Honors Seminar (3 semester hours) A course for students who conduct undergraduate thesis research in the School of Behavioral and Brain Sciences. The seminar explores the different types of thesis research, current research opportunities in the school, and appropriate techniques for writing the thesis proposal and final thesis report. Broader issues of professional development are also explored. Permission of Associate Dean required. This course is required for all students seeking School Honors (minimum GPA of 3.40 & 30 hours at UTD). Taken on a Credit/No Credit basis. (Same as CLDP 4375, PSY 4375, NSC 4375, and SPAU 4375) (3-0) Y
Special Topics

Topics under the following course number vary from semester to semester. The class schedule for the current semester will list the special topic that will be offered.

CGS 4V90 Special Topics in Cognitive Science (1-6 semester hours) May be repeated for credit as topics vary (9 hours maximum). (Same as CLDP 4V90, NSC 4V90, PSY 4V90, and SPAU 4V90) (3-0) R

Independent Study

The following independent study courses are advanced individualized projects to be arranged with a supervising professor. Open only to qualified students by consent of instructor. Students must contact professor and design a contract for study prior to enrollment. Permission forms are available in the Associate Dean’s office. Student may enroll in no more than a total of 6 semester credit hours of independent study courses during one semester and may take as Independent Study a maximum of 20 percent of the total hours of coursework undertaken at U.T. Dallas or 12 semester credit hours, whichever is smaller.

CGS 4394 Internship in Cognitive Science (3 semester hours) Students earn course credit for field experience in an applied setting. Requires working at least 8 hours per week at an approved community agency or business of the student’s choice. Students keep daily job diaries, attend one class meeting per month, and write brief papers relevant to their experiences. Open to students in good academic standing with a GPA of at least 2.5 who have reached junior or senior standing (more than 53 hours). Apply for placements on the BBS website. Graded Credit/No Credit only. (Same as CLDP 4394, PSY 4394, NSC 4394 and SPAU 4396) (3-0) S

CGS 4395 Co-op Fieldwork (3 semester hours) Students earn course credit for field experience in an approved business or government setting. Requires working at least 8 hours per week. Students will keep a journal of their workplace experience, maintain contact with the instructor, and prepare a written report that focuses on the accomplishments and insights gained through their co-op experience. Credit will not be awarded retroactively. Apply for placements through the Career Center office. May be repeated for credit (6 hours maximum). Graded Credit/No Credit only. (Same as CLDP/PSY 4395. (3-0) Y

CGS 4397 Honors Thesis (3 semester hours) An independent study in which the student writes an honors thesis under faculty supervision. Permission of instructor and Associate Dean required. (3-0) S

CGS 4V96 Teaching Internship (1-3 semester hours) Students work individually with faculty member in preparing and presenting course materials and tutoring students. Must have completed the relevant course with a grade of at least B and have a U.T. Dallas GPA of at least 3.00. Permission of instructor required. Graded Credit/No Credit only. May be repeated for credit (6 hours maximum). (1-3]-0) S

CGS 4V98 Directed Research (1-3 semester hours) Student assists faculty with research projects or conducts a research project under weekly faculty supervision. Taken on a Credit/No Credit basis. May be repeated for credit (6 hours maximum). (1-3]-0) S

CGS 4V99 Individual Study (1-3 semester hours) Student studies advanced topics under weekly faculty direction. Permission of the instructor and Associate Dean required. Graded Credit/No Credit only. May be repeated for credit (6 hours maximum). (1-3]-0) S

Communications Course Descriptions

COMM 2312 Principles of Oral Communications (3 semester hours) Survey of basic factors affecting human interaction through oral communication. Study and practice in the preparation and delivery of oral presentations; practice in different types of speeches and forms of delivery: evaluation of speakers and speeches. (3-0) R

COMM 2313 Public Speaking (3 semester hours) Designed to introduce students to the principles of public speaking. Emphasizes preparation (including audience analysis, research, outlining, and practice) and performance. Course will focus on performance-based formal speeches, presentations, selected readings, examinations and classroom exercises. (3-0) T

COMM 2V71 Independent Study in Communications (1-3 semester hours) Independent study under a faculty member’s direction. Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). (1-3]-0) R
COMM 3301 Public and Professional Speaking for Business (3 semester hours) Explores public communication strategies in professional contexts. Helps students develop skills to maximize business communication opportunities to present themselves and their ideas. Prerequisite: Upper-division standing or COMM 2312 or COMM 2313. (3-0) T

COMM 3311 Interpersonal Communication (3 semester hours) The course will examine elements that characterize and contribute to unhealthy relationships and examines theories and strategies to establish and maintain healthy relationships. The course will explore basic concepts involved in the communication process and will introduce related skills to aid in successful communication. Prerequisite: Upper-division standing, or RHET 1302 or equivalent. (3-0) T

COMM 3338 Debate (3 semester hours) By instructor approval only, this course is open to members of the UTD competitive debate team. Working as a squad, students will participate in practice debates as well as weekend competitions against other colleges and universities across the country. May be repeated for credit (12 hours maximum). Prerequisite: Permission of the instructor. (3-0) S

COMM 3342 Topics in Communication (3 semester hours) Topics may include theory and practice of oral and verbal communication techniques with specific applications and performance demonstration. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: Upper-division standing. (6-0) R

COMM 4313 Advanced Public Speaking (3 semester hours) Course is for students who have mastered basic public speaking skills. It will explore and fine-tune a wider range of styles and skills. The course will be performance-centered and will include presentations, selected readings, examinations and classroom exercises on a more advanced level. Prerequisite: COMM 2312, COMM 2313 or permission of instructor. (3-0) R

COMM 4314 Persuasion (3 semester hours) The course will emphasize the critical evaluation of persuasive messages and the design of persuasive appeals. By merging theory and practice, students will focus on an understanding of persuasive techniques as a mean for influencing attitudes, beliefs, opinions, and actions in a variety of settings, including business, politics, and interpersonal interactions. Prerequisites: RHET 1302 and either COMM 2313 or COMM 3301 or permission of instructor. (3-0) R

COMM 4V71 Independent Study in Communications (1-3 semester hours) Independent study under a faculty member's direction. Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). Consent of instructor required. ([1-3]-0) R

Computer Science Course Descriptions

CS 1136 (COSC 1136) Computer Science Laboratory (1 semester hour) Laboratory course to accompany CS 1336. This course teaches basic computer literacy/programming skills: disk operating system (DOS) commands (to format disks and to create, manipulate, and remove directories and files), the authoring of ASCII text files, compiler usage in converting source programs into executable form, printer commands. Corequisite: CS 1336. (0-0) S

CS 1336 (COSC 1336) Programming Fundamentals (3 semester hours) Introduction to computers. Primitive data types, variable declarations, variable scope, and primitive operations. Control statements. Methods/functions. Arrays, and strings using primitive data arrays. Output formatting. Debugging techniques. Designed for students with no prior computer programming experience. Corequisite: CS 1136. Note that a grade of ‘C’ or better is required in order to register for CS 1337. (3-0) S

CS 1337 (COSC 1337) Computer Science I (3 semester hours) Introduction to object-oriented software analysis, design, and development. Classes and objects. Object composition and polymorphism. Sorting, searching, recursion. Strings using core classes. Inheritance and interfaces. Graphical User Interfaces. Includes a comprehensive programming project. Prerequisite: CS 1336 with a grade of C or better or equivalent. (Same as CE 1337) (3-0) S

CS 2305 (MATH 2305) Discrete Mathematics for Computing I (3 semester hours) Principles of counting. Boolean operations. Logic and methods of proof. Sets, relations, functions, strings, and languages. Students cannot get credit for both CS 2305 and CE/TE 3307. Prerequisite: MATH 1326, MATH 2413 or MATH 2417. (3-0) S

CS 2336 (COSC 2336) Computer Science II (3 semester hours) Exceptions and number formatting. File input/output using Stream classes. Implementation of primitive data structures, including linked lists (all types), stacks, queues, and binary trees. Advanced data manipulation using core classes. Introduction to multithreading, multimedia, and networking. Includes a comprehensive programming project. Prerequisite: CS 1337. (Same as CE 2336) (3-0) S

CS 2V95 Individual Instruction in Computer Science/Software Engineering (1-6 semester hours) Individual study under a faculty member’s direction. May be repeated for credit as topics vary (6 hours maximum). Consent of instructor required. (Same as SE 2V95) ([1-6]-0) R
CS 3149 Competitive Learning in Computer Science (1 semester hour) In this course, students will work together in small teams to solve graduated problems, similar to those used in programming contests around the world. Approaches to categorizing problems and selecting appropriate data structures and algorithms will be covered, along with types of algorithms for solving problems (brute force, greedy, divide and conquer, dynamic programming). Students will do problem solving in a competitive environment against the clock. May be repeated for credit (3 hours maximum). Prerequisites: CS 2336 and CS 3305. (1-0) Y

CS 3195 Special Topics in Computer Science/Software Engineering (1 semester hour) May be repeated for credit as topics vary (4 hours maximum). Must be taken Credit/No Credit. Consent of instructor required. (Same as SE 3195) (1-0) R

CS 3305 Discrete Mathematics for Computing II (3 semester hours) Topics in enumeration; principle of inclusion and exclusion. Partial orders and lattices. Algorithmic complexity; recurrence relations. Graph theory. Students cannot receive credit for both CS 3305 and CE/TE 3307. Prerequisite: CS 2305. (3-0) S

CS 3333 Data Structures (3 semester hours) Programming with basic data structures (arrays, stacks, queues, lists, and trees) and their associated algorithms. Various sorting and searching techniques. Fundamental graph algorithms. This course covers much of the same material as CS 3345 without requiring the analysis of algorithms. Computer Science majors may NOT take this course. This course may not be taken for degree credit by students who have completed CS 2336 (C/C++). Prerequisite: CS 1337 or CS 3335 or equivalent programming experience. (3-0) Y

CS 3335 C and C++ (3 semester hours) Numerous programming projects in both C and C++. All fundamentals of C, with special emphasis on use of pointers. Use of C++ extensions to create and extend (by inheritance) abstract data types. The use advantages of virtual functions (dynamic polymorphism). Prerequisite: CS 2336 or equivalent. (3-0) T

CS 3340 Computer Architecture (3 semester hours) This course introduces the concepts of computer architecture by going through multiple levels of abstraction, and the numbering systems and their basic computations. It focuses on the instruction-set architecture of the MIPS machine, including MIPS assembly programming, translation between MIPS and C, and between MIPS and machine code. General topics include performance calculation, processor datapath, pipelining, and memory hierarchy. Students who have already completed CS 2310 or CS/SE 4340 cannot receive credit for this course. Students cannot get credit for both CS/SE 3340 and CE/EE/TE 3341. Prerequisite: CS 1337. (Same as SE 3340) (3-0) S

CS 3341 Probability and Statistics in Computer Science and Software Engineering (3 semester hours) Axiomatic probability theory, independence, conditional probability. Discrete and continuous random variables, special distributions of importance to CS/SE and expectation. Simulation of random variables and Monte Carlo methods. Central limit theorem. Basic statistical inference, parameter estimation, hypothesis testing, and linear regression. Introduction to stochastic processes. Illustrative examples and simulation exercises from queuing, reliability, and other CS/SE applications. Students cannot get credit for both CS/SE 3341 and CE/EE/TE 3341. Prerequisites: MATH 1326, MATH 2414 or MATH 2419, and CS 2305. (Same as SE 3341) (3-0) S

CS 3345 Data Structures and Introduction to Algorithmic Analysis (3 semester hours) Analysis of algorithms including time complexity and Big-O notation. Analysis of stacks, queues, and trees, including B-trees. Heaps, hashing, and advanced sorting techniques. Disjoint sets and graphs. Course emphasizes design and implementation. Students cannot receive credit for both CS/SE 3345 and CE/TE 3346. Prerequisites: CS 2336 and one of CS 3305 or SE 3306. Prerequisite or corequisite: CS/SE 3341. (Same as SE 3345) (3-0) S

CS 3354 Software Engineering (3 semester hours) Introduction to software life cycle models. Software requirements engineering, formal specification and validation. Techniques for software design and testing. Cost estimation models. Issues in software quality assurance and software maintenance. Prerequisites: CE/CS 2336 or CS 3333, and CE/TE 3307 or CS 2305. Pre- or corequisite: ECS 3390. (Same as CE/SE 3354) (3-0) S

CS 3375 Principles of UNIX (3 semester hours) Design and history of the UNIX operating system. Detailed study of process and file system data structures. Shell programming in UNIX. Use of process-forking functionality of UNIX to simplify complex problems. Interprocess communication and coordination. Device drivers and streams as interfaces to hardware features. TCP/IP and other UNIX inter-machine communication facilities. Prerequisite: CS 2336 (C/C++) or CS 3335 or equivalent programming experience, including knowledge of C. (3-0) S

CS 3385 Ethics, Law, Society, and Computing (3 semester hours) Issues of professional ethics; computer crime; wiretapping and encryption; protecting software and other intellectual property; privacy and information; careers and computers; reliability and safety; constitutional issues. Broader issues on the impact and control of computers. (3-0) S

CS 3V95 Undergraduate Topics in Computer Science/Software Engineering (2-9 semester hours) Subject matter will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). (Same as SE 3V95) (2-9-0) S

CS 4141 Digital Systems Laboratory (1 semester hour) Laboratory to accompany CS 4341. The purpose of this laboratory is to give students an intuitive understanding of digital circuits and systems. Laboratory exercises include construction of simple digital logic circuits using prototyping kits and board-level assembly of a personal computer. Students who have already completed CS 2110 have credit for this lab and cannot take it. Corequisite: CS 4341. (0-2) S
CS 4314 Intelligent Systems Analysis (3 semester hours) Mathematical tools for investigating the asymptotic behavior of both deterministic and stochastic nonlinear dynamical systems. Topics include: artificial neural network architectures, Lyapunov stability theory, and stochastic approximation theory. Applications to artificial neural network models of brain and behavior. Prerequisite: CGS 4313 or consent of instructor. (Same as CGS 4314) (3-0) T

CS 4315 Intelligent Systems Design (3 semester hours) Mathematical tools for the design and evaluation of artificially intelligent deterministic and stochastic nonlinear dynamical systems. Topics include: nonlinear optimization theory, Markov random fields, asymptotic statistical theory. Applications to theory and model construction in the behavioral and brain sciences as well as the field of artificial intelligence. Prerequisite: CS 4314 or consent of instructor. (Same as CGS 4315) (3-0) T

CS 4334 Numerical Analysis (3 semester hours) Solution of linear equations, roots of polynomial equations, interpolation and approximation, numerical differentiation and integration, solution of ordinary differential equations, computer arithmetic, and error analysis. Students cannot get credit for both CS/MATH 4334 and CE/EE/TE 4334. Prerequisites: CS 1337, MATH 2418, MATH 2451. (Same as MATH 4334) (3-0) Y

CS 4336 Advanced Java (3 semester hours) Advanced Java programming techniques integrating the technologies of advanced swing GUI components, JavaBeans, Java Servlets and Server Pages, XML, Security, Java Database Connectivity, Remote Method Invocation, and Software applications for Wireless Devices. Students will have the opportunity to work on their own E-Business Solutions. Prerequisite: CS 2336 or equivalent. (3-0) T

CS 4337 Organization of Programming Languages (3 semester hours) Principles of design and implementation of contemporary programming languages. Formal description including specification of syntax and semantics of programming languages. Language definition structures including binding, scoping, data types, control structures, parameter passing, abstraction mechanism, and run-time considerations. Design issues of imperative languages, object-oriented languages, functional languages and logic languages. Design, implement, and debug programs in various programming language paradigms. Prerequisites: CE/CS 2336 or CS 3333, and CE/TE 3307 or CS 2305. (Same as CE 4337) (3-0) S

CS 4341 Digital Logic and Computer Design (3 semester hours) Boolean algebra and logic circuits; synchronous sequential circuits; gate level design of ALUS, registers, and memory unit; register transfer operations; design of data path and control unit for a small computer; Input-Output interface. Students who have already completed CS/SE 4340 cannot receive credit for this course. Students cannot get credit for both CS 4341 and CE/EE 3320. Prerequisites: EE 2310 or CS 3340 and PHYS 2326. Corequisite: CS 4141. (3-0) S

CS 4347 Database Systems (3 semester hours) This course emphasizes the concepts and structures necessary for the design and implementation of database management systems. Topics include data models, data normalization, data description languages, query facilities, file organization, index organization, file security, data integrity, and reliability. Prerequisite: CS/SE 3345. (Same as SE 4347) (3-0) Y

CS 4348 Operating Systems Concepts (3 semester hours) An introduction to fundamental concepts in operating systems: their design, implementation, and usage. Topics include process management, main memory management, virtual memory, I/O and device drivers, file systems, secondary storage management, and an introduction to critical sections and deadlocks. Prerequisites: CS/SE 3340 or CS/SE 4340 or CE/EE 4304, CS/SE 3345 or CE/TE 4346, and a working knowledge of C and UNIX. (Same as CE/SE/TE 4348) (3-0) S

CS 4349 Advanced Algorithm Design and Analysis (3 semester hours) Asymptotic analysis, recurrences, and graph algorithms. Algorithm design techniques such as greedy method, dynamic programming, and divide-and-conquer. Issues from computational complexity. Course emphasizes a theoretical approach. Prerequisite: CS/SE 3345. (3-0) S

CS 4352 Human Computer Interactions I (3 semester hours) Methods and principles of human-computer interaction (HCI), user-centered design (UCD), and usability evaluation. Provides broad overview of HCI and how HCI informs UCD processes throughout product development lifecycle. (Same as CGS 4352) (3-0) T

CS 4353 Human Computer Interactions II (3 semester hours) Detailed exploration of human-computer interaction (HCI) through readings in journal articles and research reports. Practical experience in methodology typically used in the design of usable systems. Prerequisite: CS 4352 or consent of the instructor. (Same as CGS 4353) (3-0) T

CS 4361 Computer Graphics (3 semester hours) Review of graphic display architecture and graphic input devices. Two- and three-dimensional transformations, matrix formulations, and concatenation. Clipping and windowing. Data structures for graphics systems, segmented display files, rings, etc. Hidden line and surface elimination. Shading. Graphics packages and applications. Prerequisites: MATH 2418, CS 2336, and CS/SE 3345. (3-0) Y

CS 4365 Artificial Intelligence (3 semester hours) Basic concepts and techniques that enable computers to perform intelligent tasks. Examples are taken from areas such as natural language understanding, computer vision, machine learning, search strategies and control, logic, and theorem proving. Prerequisites: CS 2336 and CS/SE 3345. (3-0) Y
CS 4375 Introduction to Machine Learning (3 semester hours) Algorithms for creating computer programs that can improve their performance through learning. Topics include: cross-validation, decision trees, neural nets, statistical tests, Bayesian learning, computational learning theory, instance-based learning, reinforcement learning, bagging, boosting, support vector machines, Hidden Markov Models, clustering, and semi-supervised and unsupervised learning techniques. Prerequisites: CS/SE 3341 and CS/SE 3345. (3-0) Y

CS 4376 Object-Oriented Programming Systems (3 semester hours) In-depth study of the features/advantages of object-oriented approach to problem solving. Special emphasis on issues of object-oriented analysis, design, implementation, and testing. Review of basic concepts of object-oriented technology (abstraction, inheritance, and polymorphism). Object-oriented programming languages, databases, and productivity tools. Prerequisite: CS 2336 or equivalent. (Same as SE 4376) (3-0) S

CS 4384 Automata Theory (3 semester hours) A review of the abstract notions encountered in machine computation. Topics include finite automata, regular expressions, PDAs, and context-free languages. Prerequisite: CS 3305. (3-0) S

CS 4386 Compiler Design (3 semester hours) Basic phases of a compiler and their design principles. Topics include lexical analysis, basic parsing techniques such as LR(K) and LL(K) grammars. Prerequisites: CS/SE 3345 and CS 4384. (3-0) R

CS 4389 Data and Applications Security (3 semester hours) Data as a critical resource. Threats to data and applications security including access control violations, integrity violations, unauthorized intrusions and sabotage; techniques to enforce security. Prerequisite: CS/SE 4347. (3-0) Y

CS 4390 Computer Networks (3 semester hours) The design and analysis of computer networks. Topics include: the ISO reference model, transmission media, medium-access protocols, LANs, data link protocols, routing, congestion control, internetworking, and connection management. Students cannot get credit for both CE/CS/TE 4390 and EE 4390. Prerequisite: CS/SE 3345 or CE/TE 3346. (Same as CE/TE 4390) (3-0) S

CS 4391 Introduction to Computer Vision (3 semester hours) Techniques for manipulating and extracting information from digital images and video. Topics include color representations, analysis and processing based on image histograms, geometric transformations, convolutions, image blurring and sharpening, extraction of edges, matching, image and video motion. Prerequisites: CS/SE 3345. (3-0) Y

CS 4392 Computer Animation (3 semester hours) Introduction to traditional animation. Kinematics of motion. Key framing. Coordinate systems and transformations (review), Euler angles and Quaternions, Catmull Rom and B-Splines, Advanced Key framing, articulated figures (forward kinematics), human and animal modeling (soft tissue, skin, etc.). Facial animation (parametric). Physically based modeling (rigid, collision detection). Physically based modeling (deformable). Behavioral and heuristic models. Algorithmic animation. Optimization techniques. Animation languages and systems. Motion capture and real time control. Virtual reality and animation. Rendering and temporal aliasing. 2D and 3D morphing. 3D modeling. Prerequisites: MATH 2418 and CS 2336 or equivalent. (3-0) Y

CS 4393 Computer and Network Security (3 semester hours) The study of security and vulnerabilities in computer and network systems. Common attacking techniques such as buffer overflow, viruses, worms, etc. Security in existing systems such as UNIX, Windows, and JVM. Fundamental access control and information flow concepts. Symmetric Ciphers such as DES and AES. Public-key encryption techniques and related number theory. Message authentication, hash functions, and digital signatures. Authentication applications, IP security and Web security. Prerequisite: CS/SE/TE 4390. (3-0) Y

CS 4394 Implementation of Modern Operating Systems (3 semester hours) This course focuses on developing systems implementation skills through a set of projects. Each project will explore one fundamental component of operating systems such as process scheduling, memory management, device drivers, file systems, and network communication management. The projects are expected to involve kernel-level programming. Prerequisites: CS 4348 (OS) and CS 3335, or equivalent programming experience. (3-0) R

CS 4396 Networking Laboratory (3 semester hours) This course takes a lab-oriented approach to demonstrate how basic networking concepts are applied in a real network. The Hands-on projects include setting up simple network topologies, configuring devices to run basic network protocols, and using various debugging tools to identify, locate, and fix common problems in networking. Prerequisite: CE/CS/TE 4390. (3-0) Y

CS 4397 Embedded Computer Systems (3 semester hours) Introduction to embedded computer applications and concepts. Real-time operating systems and resource management. Real-time scheduling and communication. Senior data acquisition, processing and fusion. Error handling, fault tolerance, and graceful degradation. System performance analysis and optimization techniques. Includes a project to develop and analyze a small embedded computer application. Prerequisite: CE/CS/SE/TE 4348. (3-0) Y

CS 4398 Digital Forensics (3 semester hours) Creating and preserving digital evidence, data recovery and evidence collection algorithms, evidence construction and reconstruction, methods for certifying evidence, storing evidence, data acquisition, forensic analysis algorithms, image files, network forensics, logging methods to trace back attacks and digital trails, e-mail investigations. Prerequisites: CE/CS/SE/TE 4348 and CE/CS/TE 4390. (3-0) Y
CS 4399 Senior Honors in Computer Science/Software Engineering (3 semester hours) For students conducting independent research for honors theses or projects. Topics may vary. (Same as SE 4399) (3-0) R

CS 4485 Computer Science Project (4 semester hours) This course is intended to complement theory and to provide an in-depth, hands-on experience in all aspects of a software development project. Students will work in teams on projects of interest to industry and will be involved in specifying the problem and its solution, designing and analyzing the solution, developing the software architecture, along with implementation and testing plans. The deliverables will include reports that document these steps as well as a final project report and a user manual of the developed system. Teams will also make presentations during the class as well as demonstrate their software. Prerequisite: CS/SE 3345, CE/CS/SE 3354, at least three CS 43XX classes including at least one elective. (4-0) S

CS 4V95 Undergraduate Topics in Computer Science/Software Engineering (1-9 semester hours) Subject matter will vary from semester to semester. May be used as CS Guided Elective on CS degree plans. May be repeated for credit as topics vary (9 hours maximum). (Same as SE 4V95) ([1-9]-0) R

CS 4V98 Undergraduate Research in Computer Science/Software Engineering (1-9 semester hours) Topics will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). Consent of instructor required. (Same as SE 4V98) ([1-9]-0) R

Creative Writing Course Descriptions

CRWT 2301 Introductory Creative Writing (3 semester hours) An introduction to creative writing, the course will investigate and instruct students in the elementary approach to the process of creating original prose, poetry, and/or dramatic format works. The class will focus on a minimum of two genres and will cover both experimental and traditional forms. Prerequisite: RHET 1302. (3-0) S

CRWT 2V71 Independent Study in Creative Writing (3 semester hours) Independent study under a faculty member’s direction. Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). ([1-3]-0) R

CRWT 3307 Creating Short Stories (3 semester hours) A creative workshop on the art of the short story which both investigates the creative techniques and processes involved in writing short stories and also concentrates on a variety of experimental and traditional forms that combine the art of words with the visual and performing arts. May be repeated for credit (9 hours maximum.) Prerequisite: CRWT 2301 or permission of instructor. (3-0) T

CRWT 3308 Creating Nonfictions (3 semester hours) A creative workshop built around the aesthetic techniques and aesthetic processes used to create essays, biographies, and autobiographies as works of art. Topics will vary and often will include work by visual artists, filmmakers, composers, or other writers. May be repeated for credit as topics vary (9 hours maximum.) Prerequisite: CRWT 2301 or permission of instructor. (3-0) T

CRWT 3351 Creating Poetry (3 semester hours) A creative workshop on the art of poetry which investigates the creative techniques and processes involved in writing poems in various, often opposing, forms that combine the art of words with the visual and performing arts. May be repeated for credit (9 hours maximum). Prerequisite: CRWT 2301 or permission of instructor. (3-0) T

CRWT 3360 Art Criticism (3 semester hours) This seminar provides a context for practice in the writing of art criticism. Subjects selected for examination may include visual arts, film, dance, theater, music, fiction, and poetry. Prerequisite: ARTS 1301 or equivalent. May be repeated for credit (6 hours maximum). (3-0) R

CRWT 4307 Creating Short Stories: Advanced (3 semester hours) An advanced workshop on the creation and theory of the short story that will focus both on structure and on creative techniques and creative process involved in writing sophisticated, challenging, and linguistically developed short stories. May be repeated for credit (6 hours maximum.) Prerequisite: CRWT 3307 or permission of instructor. (3-0) T

CRWT 4353 Creating Poetry: Advanced (3 semester hours) An advanced workshop on the creation, history, and theory of poetry that will focus on the creative techniques and the creative process involved in writing formalist, lyrical, free verse, and experimental poetry. May be repeated for credit (6 hours maximum.) Prerequisite: CRWT 3351 or permission of the instructor. (3-0) T

CRWT 4354 Creating Play, Movie, and Television Scripts (3 semester hours) An advanced workshop on the aesthetics, art, and creation of play, movie, and television scripts which will focus on the creative techniques and the creative process involved not only in the creation of film, play, and television scripts, but also in the production of plays, films, and television episodes. May be repeated for credit as topics vary (9 hours maximum.) Prerequisite: CRWT 3301 or permission of instructor. (3-0) T
CRWT 4V71 Independent Study in Creative Writing (1-3 semester hours) Independent study under a faculty member’s direction. Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). Prerequisite: Upper-division standing, and completion of all lower-division requirements in AP and permission of the instructor. ([1-3]-0) R

Criminology Course Descriptions

CRIM 1301 Introduction to Criminal Justice (3 semester hours) An overview and analysis of the major agencies, personnel, and decision-making points which comprise the criminal justice system. Includes problems and issues confronting legislatures, police, courts, corrections, and the community, as they respond to crime in a free society. Legal precedents guiding the decisions of criminal justice agents are also discussed. (3-0) Y

CRIM 1307 Introduction to Crime and Criminology (3 semester hours) Survey of the nature, location, and impact of crime in America. Includes historical foundations of crime, theoretical explanations of criminality and delinquency, the recording and measurement of crime, descriptions of criminal careers, crime topologies, and an analysis of public policies concerning crime control. (3-0) Y

CRIM 3300 Crime and Civil Liberties (3 semester hours) Examines the various components / agencies of the criminal justice “system.” The functions of the police, courts, prosecution, and corrections are analyzed within a context in which constitutional rights and civil liberties affect the functioning of the criminal justice system. Major emphasis is placed on the extent to which civil liberties and procedural rights constrain or limit the system’s effectiveness in delivering crime control, while at the same time ensuring “justice.” (3-0) T

CRIM 3301 Theories of Justice (3 semester hours) Survey of the basic theoretical rationales and perspectives concerning the concept of “justice” with selected readings from classical and contemporary theorists. (3-0) R

CRIM 3302 Advanced Criminology (3 semester hours) This course provides students with an in-depth study of crime, criminals, and the reaction of the criminal justice system to both. It explores the interrelationships among law, policy, and societal conditions. The major focus of the course is theoretical explanations for crime and criminality. Prerequisite: CRIM 1307. (3-0) Y

CRIM 3303 Advanced Criminal Justice (3 semester hours) Analyzes the major agencies, personnel, and decision-making points which comprise the criminal justice system. Explores some of the major theories and research about the roles that the various agencies and actors play in the criminal justice system. Includes discussion of the problems and current issues confronting legislatures, police, courts, corrections, and the community, as they respond to crime. Prerequisite: CRIM 1301. (3-0) Y

CRIM 3304 Research Methods in Crime and Justice Studies (3 semester hours) Examines methods of crime and justice research. Topics include the nature of scientific inquiry, framing a research problem, choosing a research design, developing hypotheses, sampling designs, and measuring variables. Topics will be covered as students conduct their own study. Should be taken before SOCS 3305 or STAT 1342. (3-0) Y

CRIM 3306 Criminal Law (3 semester hours) Examines the statutory basis of crime and the legal requirements surrounding “mens rea” and legally permissible defenses permitted under criminal due process. Emphasis is placed on both criminal statutes and case law. (3-0) T

CRIM 3307 Immigration and Crime (3 semester hours) The course emphasizes the practices and policies of law enforcement’s efforts to control illegal immigration, including the relationship between illegal immigration and counterterrorism, as well as victimization experienced by immigrants. (3-0) R

CRIM 3308 Juvenile Law (3 semester hours) Examines the statutory bases which distinguish delinquency from adult crime and the juvenile justice system from the criminal justice systems. Emphasis is placed on the rationale for treating juveniles accused of crime differently than their adult counterparts. (3-0) R

CRIM 3309 Media and Crime (3 semester hours) Examines the media’s image of crime and the criminal justice system. An emphasis is placed on how various types of media construct or perceives criminal activities, how the media influences public policy, and shapes perceptions of crime as a social problem. Topics include crime news, films and television dramas depicting crime and criminals, the media as a cause, consequence and cure for crime and “news making” criminology. (3-0) R

CRIM 3310 Youth Crime and Justice (3 semester hours) Examines the concept of juvenile delinquency as a distinct type of criminal activity from that committed by adults and assesses the distinct juvenile justice system that has evolved to handle children. Topics will include the historical roots of delinquency and the juvenile justice system, delinquency measurement, explanations of delinquency, and the socio-demographic correlates of delinquency status. (Same as SOC 3362) (3-0) R

CRIM 3312 Drugs and Crime (3 semester hours) Provides students with a survey of legislation that has been attempted to combat the use of drugs, the relationship between drug use/abuse and crime, and the public policy problem surrounding the
control of drugs. Topics include a historical analysis of the laws passed to control drugs, the relationship between drugs and crime, and a policy analysis of the alternative means available to deal with the drugs-crime problem. (3-0) R

CRIM 3313 Police and Society (3 semester hours) Examines the central issues of enforcing law and promoting public safety in society with emphasis placed on both internal organizational issues of police administration and external enforcement operations. (Same as SOC 4362) (3-0) R

CRIM 3316 Corrections (3 semester hours) Introduces students to the history and background of American corrections and the fundamental theories of punishment and treatment. Emphasis will be placed on the policies, practices, and issues within the correctional system. The incarceration of criminal populations in jails and prisons, and the expansion of community-based corrections will also be discussed. (3-0) R

CRIM 3317 Criminal Prosecution and Court Process (3 semester hours) Examines the decision-making, politics, and processes of bringing criminal defendants to trial and the constitutional system of criminal due process under which criminal law is practiced. (3-0) R

CRIM 3319 Comparative Justice Systems (3 semester hours) Survey of the differing policies, practices, and procedures of crime and justice cross-nationally. Special emphasis will be devoted to U.S. / Mexico comparisons, while additional emphasis will be placed on such comparisons as U.S./Canada and U.S./England. (3-0) R

CRIM 3320 Homicide and Capital Punishment (3 semester hours) Examines the policy and legal controversies surrounding the application of capital punishment (i.e., the death penalty) as a punishment for homicide. Topics include: capital punishment through history, U.S. Supreme Court decisions and contemporary problems with the application of the death penalty. The course will also analyze the nature, extent, and distribution of criminal homicide. (3-0). T

CRIM 3322 Crime Prevention (3 semester hours) Examines the situational, social, and legislative approaches to the prevention of crime and delinquency. The emphasis is on the theories of victimization and the extent to which victim demographics play a role in crime, and the implementation and consequences of various crime prevention policies and approaches and their differential effects on victims throughout various sectors of society. (3-0) R

CRIM 3324 Gender, Crime, and Justice (3 semester hours) Analysis of the role of gender in crime and in the justice system. The emphasis is on gender differences in the commission of crime and the types of crimes committed, criminal justice processing, and the employment of women in criminal justice professions. (3-0) T

CRIM 3325 Victimology (3 semester hours) Examines the major perspectives on victimization. The emphasis is on patterns of victimization, the role of victims in the generation of crime, and the experience of victims in the criminal justice system. Special attention will be devoted to: sources of data — particularly the National Crime Victimization Survey, trends, variations by demography and offense type and ways in which those variations may affect how criminal justice officials respond to particular types of offenses. (3-0) R

CRIM 3326 Victimless Crimes (3 semester hours) Examines public order crimes, which includes a variety of behaviors that are illegal yet generally perceived by those engaging in them to be legitimate, justified, and acceptable. Many such offenses are illegal only because the government has said so, especially public order violations where there may be no identifiable victim. The objective of this course is to develop an understanding of the complexities and controversies that swirl around these offenses. Prerequisite: CRIM 1301 or CRIM 1307. (3-0) R

CRIM 3327 Violent Crime (3 semester hours) This course explores the etiology, enactment, and control of serious interpersonal violence. The analytic focus includes robbery, homicide, aggravated assault, sexual assault, state violence, and white collar violence. Prerequisite: CRIM 1301 or CRIM 1307. (3-0) R

CRIM 4305 Social Control and Criminal Sanctions (3 semester hours) Examines various means by which society attempts to control the deviant and criminal conduct of its members. Social control encompasses both formal criminal sanctions and informal mechanisms and a variety of institutions and social processes that are designed to deter inappropriate conduct if possible and/or punish and reform such conduct when it does occur. Moreover, social control has evolved considerably over time and various social control philosophies and techniques have been prevalent in one time frame but not in others. Prerequisites: CRIM 3302 or CRIM 3303. (Same as SOC 3332) (3-0) S

CRIM 4311 Crime and Justice Policy (3 semester hours) In-depth analysis of crime and the efforts to control crime through public policy. Although crime is most often committed by private persons against individual victims, crime is a public problem and society's reaction to crime and criminals is one of the most controversial areas of public policy. Crime control, deterrence and incapacitation, gun control, law enforcement, and court processes are just a few of the areas in which public opinion and policy are in current controversy and debate. (Same as SOC 3361) Prerequisites: CRIM 3302 or CRIM 3303. (3-0) R

CRIM 4314 Current Issues in Policing (3 semester hours) Examines issues related to the accountability of the police to the electorate through the political process. Focuses on the governmental setting for police work, policies and practices, and current political issues in municipal, state, and federal police agencies. Prerequisites: CRIM 3303 and CRIM 3313. (3-0) R
CRIM 4315 Race, Ethnicity and Justice (3 semester hours) Examines how race and ethnicity pose differential risks for criminal behavior in conjunction with differential justice system responses to crime and criminals in minority communities. Prerequisite: CRIM 3302 or CRIM 3303. (3-0) R

CRIM 4316 Advanced Issues in Corrections (3 semester hours) The course examines selected contemporary issues and topics in the correctional system. Significant emphasis is placed on the extent to which theory and research contribute to understanding current correctional system policies, practices, and problems. Prerequisites: CRIM 3303 and CRIM 3316. (3-0)

CRIM 4322 Senior Research Seminar (3 semester hours) Major concepts and principles of Criminology will be applied to the analysis of crime. Capstone required course for senior Criminology majors. Prerequisites: Completion of all, or concurrent enrollment in, major requirements. T

CRIM 4323 Communities and Crime (3 semester hours) Analyzes the sources, consequences, and control of crime within communities. The emphasis is on social and ecological theories of crime, and on population instability, family structure, and the concentration of poverty as causes of crime. Community crime prevention efforts are also discussed. Prerequisite: CRIM 3302. (3-0) T

CRIM 4330 Qualitative Criminology (3 semester hours) Examines the research strategies, methodological and philosophical issues, and legal and ethical issues of qualitative research. Topics include phenomenology, ethnography (participant observation and field research), case study, in-depth interviewing, ethnomethodology, conversation analysis, content analysis, and historical methods. Prerequisites: CRIM 3302 and CRIM 3304. (3-0) R

CRIM 4331 GIS Applications in Criminology (3 semester hours) Examines spatial distributions of crime, criminals, and the criminal justice system. Students prepare computer-generated maps and apply software applications to analyze the locations of crime events and rates. We will investigate a variety of crime types (e.g., murder, robbery, and drugs). The course will also examine the residential patterns of offenders, police beats, judicial districts, community corrections, and juvenile justice districts and how these relate to physical and social characteristics of neighborhoods. Prerequisites: CRIM 3302, CRIM 3304, and SOCS 3305. (3-0)

CRIM 4396 Selected Topics in Criminology (3 semester hours) Subject matter will vary from semester to semester. Examples include: “Gangs”, “Organized Crime”, “White Collar Crime”, “Criminalistics”, and “Gun Control.” May be repeated for credit (9 hours maximum). (3-0) R

CRIM 4V97 Independent Study in Criminology (1-6 semester hours) Independent study under a faculty member’s direction. May be repeated for credit (6 hours maximum). Consent of instructor required. ([1-6]-0) S

CRIM 4V98 Internship in Criminology (1-6 semester hours) May be repeated for credit (6 hours maximum). Consent of instructor required. This course can only be taken Credit/No Credit. ([1-6]-0) S

CRIM 4V99 Senior Honors in Criminology (1-6 semester hours) For students conducting independent research for honors theses or projects. May be repeated for credit (6 hours maximum). ([1-6]-0) S

Dance Course Descriptions

DANC 1310 Understanding Dance (3 semester hours) Lectures, discussions, and performances designed to explore artistic, philosophical, and historical dimensions of the theatrical dance experience. Areas of emphases may include differing dance traditions, the nature of dance compared to other performing arts, and relations between social and theatrical dance. (3-0) Y

DANC 2331 Beginning Dance and Movement (3 semester hours) Designed for students who wish to develop skills in various forms of dance and movement. May be repeated for credit (9 hours maximum). (0-3) Y

DANC 2332 Beginning Modern Dance (3 semester hours) Designed for students who wish to develop skills in Modern dance. May be repeated for credit (9 hours maximum). (0-3) Y

DANC 2333 Beginning Jazz Dance (3 semester hours) Designed for students who wish to develop skills in Jazz dance. May be repeated for credit (9 hours maximum). (0-3) Y

DANC 2334 Beginning Ballet (3 semester hours) Designed for students who wish to develop skills in Ballet. May be repeated for credit (9 hours maximum). (0-3) Y

DANC 2V71 Independent Study in Dance (1-3 semester hours) Independent study under a faculty member’s direction. Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). ([1-3]-0) R

DANC 3332 Intermediate Dance (3 semester hours) Designed for students who wish to develop additional experiences in various forms of dance. May be repeated for credit (9 hours maximum). Prerequisite: DANC 2331 or permission of the instructor. (0-3) T
DANC 3333 Intermediate Modern Dance (3 semester hours) Designed for students who wish to develop additional experience and skills in Modern dance at an intermediate level. May be repeated for credit (9 hours maximum). Prerequisite: Minimum of 9 hours in DANC 2332 or in DANC 2334 or permission of the instructor. (0-3) T

DANC 3334 Intermediate Jazz Dance (3 semester hours) Designed for students who wish to develop additional experience and skills in Jazz dance at an intermediate level. May be repeated for credit (9 hours maximum). Prerequisite: Minimum of 9 hours in DANC 2332 or in DANC 2333 or in DANC 2334 or permission of the instructor. (0-3) T

DANC 3335 Intermediate Ballet Dance (3 semester hours) Designed for students who wish to develop additional experience and skills in Ballet at an intermediate level. May be repeated for credit (9 hours maximum). Prerequisite: Minimum of 9 hours in DANC 2334 or permission of the instructor. (0-3) T

DANC 3340 Dance in Historical Context (3 semester hours) Studies in the history of dance. Topics may include the development of western or world dance forms, specific periods, styles, traditions, and/or artists. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: ARTS 1301, DANC 1310, or equivalent. (3-0) Y

DANC 3342 Topics in Dance (3 semester hours) Topics may vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: ARTS 1301 or DANC 1310 or equivalent or permission of the instructor. (0-3) R

DANC 3345 Dance Performance (3 semester hours) Exploration of various choreographic styles and ideas of performance. Emphasis may be placed on the application of dance techniques in choreographed works. Methods may focus on the choreographic process to enrich the performer’s range of technique and expression and encourage understanding of choreographic principles and practices. May be repeated for credit (9 hours maximum). Prerequisite: DANC 3332, DANC 3333, DANC 3334, DANC 3335, or permission of instructor.

DANC 3347 Dance Composition (3 semester hours) Students will study basic concepts and applications for dance composition at a beginning level. Principles and skills will be taught through projects, analysis, and the creation of a complete work. May be repeated for credit (9 hours maximum). Prerequisite: DANC 3332, DANC 3333, DANC 3334, DANC 3335, or permission of instructor. (0-3) Y

DANC 4313 Advanced Dance (3 semester hours) Designed for students who wish to develop additional experience in various forms of dance. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: DANC 3332 or permission of the instructor. (0-3) T

DANC 4V71 Independent Study in Dance (1-3 semester hours) Independent study under a faculty member’s direction. Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). Prerequisite: Upper-division standing, and completion of all lower-division requirements in AP, and permission of the instructor. ([1-3]-0) R

Drama Course Descriptions

DRAM 1310 Understanding Theater (3 semester hours) Lectures, discussions, and performances designed to explore artistic, philosophical, and psychological dimensions of the theatrical experience. Topics may include analysis of scripts, the nature of the theatre compared to the other performing arts, and the nature of popular entertainments. (3-0) Y

DRAM 1351 Beginning Acting (3 semester hours) Explores acting fundamentals and techniques used in theatre/performance. Material may focus on classic or contemporary drama or original creations. (0-3) T

DRAM 1360 Beginning Theatre/Performance Ensemble (3 semester hours) An introductory course focused on the application of practical skills of creating theater and performance. In consultation with the instructor, the student will develop a study and work plan appropriate to their interests. Emphasis for this course will be on developing basic skills in any one or combination of the following areas: acting, dramaturgy, stage management, directing, set and scenery, properties, lighting, box office, house management, make-up, publicity, sound, or costume. Those working in the acting area must audition and be cast. May be repeated for credit as topics vary (6 hours maximum). (0-3) R

DRAM 2351 Intermediate Acting (3 semester hours) This course will continue the development of physical, emotional, and imaginative awareness as it applies to acting. The methods of creating character, text analysis, and performance techniques will be emphasized. Students will also be introduced to different styles of acting and improvisation. Material may focus on classic or contemporary drama or original creations and will include scene and monologue study and presentation. Prerequisite: DRAM 1351 or permission of instructor. (0-3) T

DRAM 2364 Musical Theater Workshop (3 semester hours) Training in singing, dancing, and acting for the musical stage. Includes preparation of performance from the works of 20th- and 21st-century composers. May be repeated for credit as topics vary (6 hours maximum). (0-3) R
DRAM 2370 Intermediate Theatre/Performance Ensemble (3 semester hours) The course will continue the application of practical skills of creating theater and performance. Topics will include the exploration of dramatic texts and/or ideas of performance. In consultation with the instructor, the student will develop a study and work plan appropriate to their interests. Emphasis for this course will be on developing skills and knowledge in any one or combination of the following areas: acting, dramaturgy, stage management, directing, set and scenery, properties, lighting, box office, house management, make-up, publicity, sound, or costume. Those working in the acting area must audition and be cast. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: DRAM 1360 or permission of the instructor. (0-3) R

DRAM 2371 Beginning Technical Theatre (3 semester hours) Designed to provide an introductory overview of all aspects of technical theatre, encompassing lighting, sound, set, props, and costume procedures, construction, and design. Practical work will reference theatre history and the theoretical foundations of technical theatre. Students will be required to attend weekly lectures and production lab hours. (0-3) Y

DRAM 2372 Improvisation (3 semester hours) Explores the fundamental concerns of the performer’s art: relaxation, concentration, movement, voice production, space and expression. Fulfills the public speaking requirement for Teacher Certification. Available to majors in Art and Performance only as a general elective. (0-3) R

DRAM 2373 Languages of the Body (3 semester hours) Explores the fundamental principles and techniques of movement and/or vocal systems and their relationship to diverse forms of theater, performance, media, and alternative stagings. Presented in a participatory workshop setting. Prerequisite: ARTS 1301 or equivalent. May be repeated for credit as topics vary (6 hours maximum). (0-3) R

DRAM 2V71 Independent Study in Drama (1-3 semester hours) Independent study under a faculty member’s direction. Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). (1-3-0) R

DRAM 3310 Advanced Theatre/Performance Ensemble (3 semester hours) Exploration of dramatic texts and/or ideas of performance. Focus may be placed on the conventions required for the theatrical performance of dramatic texts and/or the explorations of putting performance theory into practice and historical context. In consultation with the instructor, the student will develop a study and work plan appropriate to their interests. Emphasis will be on refining skills and knowledge in any one or combination of the following areas: acting, dramaturgy, stage management, directing, set and scenery, properties, lighting, box office, house management, make-up, publicity, sound, or costume. Those working in the acting area must audition and be cast. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: DRAM 2370 or permission of the instructor. (0-3) R

DRAM 3323 Performance in Historical Context (3 semester hours) Studies in theatre and performance art. The course may consider eras such as Classical, Medieval, Renaissance, Realist, Contemporary, or Experimental Avant-Garde in the Western tradition or the performance expressions of Africa, African-Americans, Oceania, Indigenous peoples, Asia, Latino or Native America. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: ARTS 1301 or equivalent. (3-0) T

DRAM 3324 Intermediate Technical Theatre (3 semester hours) Designed to teach the advanced elements of theatrical design, including lighting, sound, set, props, and costumes. Practical work will follow the design process from script to conception, through justification to finalized design. Students will be required to attend weekly lectures and production lab hours. Prerequisite: DRAM 2371 or permission of the instructor. (0-3) Y

DRAM 3325 Directing and Producing (3 semester hours) The course presents the principles and working methods of directing and producing theatre, performance, and inter-media expressions. Emphasis will be on the development of skills required to bring a text or idea to presentation. Areas of focus will include imagination and conception, image and metaphor, analysis, planning, development-rehearsal process, and production. Will require out of class lab hours. Prerequisite: DRAM 3356 or permission of the instructor. (0-3) Y

DRAM 3342 Topics in Theatre (3 semester hours) Topics may include the religious origins of theatre, the adaptation of classical themes in modern theatre, the influence of German expressionism, and the philosophical and technological innovations of modern theatre. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: ARTS 1301 or equivalent or permission of the instructor. (3-0) R

DRAM 3356 Advanced Acting/Performance (3 semester hours) Material may focus on classic or contemporary drama or on original creations. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: DRAM 2351 or permission of the instructor. (0-3) R

DRAM 4V71 Independent Study in Drama (1-3 semester hours) Independent study under a faculty member’s direction. Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). Prerequisite: Upper-division standing, and completion of all lower-division requirements in AP, and permission of the instructor. (1-3-0) R
Economics Course Descriptions

ECON 2001 Principles of Macroeconomics: Recitation (0 semester hours) This course is designed as a recitation or practice session for ECON 2301 Principles of Macroeconomics core curriculum course. Corequisite: ECON 2301. (1-0) S

ECON 2301 (ECON 2301) Principles of Macroeconomics (3 semester hours) An introduction to theories of the determination of national production and income, interest rates, inflation, and unemployment. Other topics include the banking system, the balance of payments, economic growth and development. (3-0) S

ECON 2302 (ECON 2302) Principles of Microeconomics (3 semester hours) An introduction to theories of the behavior of markets. Topics include the theory of demand and supply, market structure, resource markets, international interdependence in commodity markets, the role of government policy and regulation. (3-0) S

ECON 3304 Basic Techniques for Economic Research (3 semester hours) An introduction to the primary methods used in economic research. Topics include information technology, computer software, mathematics and statistics for economists. This course is designed to provide a foundation for all other upper-level economics and finance courses. Prerequisites: College level algebra and class level statistics (MATH 1314 and STAT 1342 or MATH 1314 and SOCS 3305). This course does not apply toward the Bachelor of Science in Economics. (3-0) Y

ECON 3310 Intermediate Microeconomic Theory (3 semester hours) The study of theories of demand, production, competition, markets, and welfare. Implications of theory for purposes of public policy prescriptions are given particular emphasis. Prerequisite: ECON 2302 and either ECON 3304, MATH 2417 or MATH 1325, or permission of instructor. (3-0) S

ECON 3311 Intermediate Macroeconomic Theory (3 semester hours) A study of the determinants of national income, employment, interest rates, and the price level, including theories and evidence regarding the influence of monetary and fiscal policies on the economy. Prerequisites: ECON 2302 and ECON 2301 and either ECON 3304, MATH 2417 or MATH 1325, or permission of instructor. (3-0) S

ECON 3312 Money and Banking (3 semester hours) The development, structure, and regulation of financial institutions and the roles of these institutions in determining the money supply and level of economic activity. (3-0) T

ECON 3315 Economics of Sports (3 semester hours) Applies principles of economic analysis to look at the nature and characteristics of professional and amateur sports industries. Examines franchising and profit-maximization, monopoly and anti-trust, public financing of sports facilities, labor markets for players, team competitive balance, discrimination and other themes. Prerequisite: ECON 2302. (3-0) T

ECON 3330 Economics of Health (3 semester hours) A study of personal and public expenditures on health care, the markets for medical personnel, the medical industry, the health insurance market, and present and proposed health-care policies. Prerequisite: ECON 2302. (3-0) R

ECON 3331 Urban Growth and Structure (3 semester hours) Deals with the economic and spatial processes underlying urban growth and regional development, and with the structural and demographic characteristics of urban areas as well as the social and psychological dynamics of urban life. This course is also recommended for students who are not Economics majors. (Same as GEOG 3331) (3-0) T

ECON 3333 Real Estate Economics and Finance (3 semester hours) Economic, legal and institutional factors involved in real estate markets. Environmental and economic trade-offs necessary for effective management are considered in the context of selected models of land use. Special attention is given to issues of urban development. This course is also recommended for students who are not economics majors. (3-0) R

ECON 3335 Psychology and Economics (3 semester hours) A study of the ways economists use basic principles from psychology in order to test and augment economic theory. Prerequisite: ECON 2302. (3-0) R

ECON 3336 Economics of Education (3 semester hours) This course looks at education through the lens of economics. Topics include ways to finance education, various controversies in the production of human capital, public policies that are designed to improve education and the consequences of poor educational performance. Prerequisite: ECON 2302. (3-0) R

ECON 3337 Economics of Poverty and Inequality (3 semester hours) Examines the economic causes and consequences of poverty and inequality. Topics include US welfare policy and transfer programs. Prerequisite: ECON 2302. (3-0) R

ECON 3369 Political Economy of Terrorism (3 semester hours) Economic and statistical methods applied to terrorism. Topics include liberal democracy dilemma, counterterrorism, history of terrorism, international cooperation, and game theory applications. Prerequisite: ECON 2303. (3-0) R

ECON 3370 The Global Economy (3 semester hours) Considers the changing relationships of population, resources, and the economy, the transformation of classical spatial economies, and the processes producing increasing globalization. Particular
attention is paid to technological change and to the dynamics of world trade and investment. This course is also recommended for students who are not economics majors. (Same as GEOG 3370) (3-0) T

**ECON 3372 Population and Development** (3 semester hours) Examines the relations between population, development, and the environment. Essential components of demographic analysis lay the foundation for a critical evaluation of demographic transition theory. Other topics include public health, population structure and life chances, cultural differences and women’s status, aging, environmental impacts, and population policy. (Same as GEOG 3371 and SOC 3371) (3-0) T

**ECON 3373 Transportation and Logistics** (3 semester hours) Focuses on concepts and methods for decision making in transportation based on both geographic and economic factors. Considers the relationships between location and cost in the context of the classic transportation problem and other location models in transportation. Examines project cost/benefit evaluation, urban travel demand modeling, transportation pricing, and issues of accessibility and economic opportunity. Prerequisite: ECON 2302 or equivalent. (Same as GEOG 3373) (3-0) Y

**ECON 3375 Transportation and Cities** (3 semester hours) Explores the relationship between urban areas and transportation systems. Examines economics of transportation in cities, transportation and urban form, highway congestion, environmental impacts of transportation, public transit, transportation and labor markets, and political influences on transportation planning. (Same as GEOG 3375) (3-0) Y

**ECON 3381 Economic History** (3 semester hours) A review of the history of Western civilization, with particular emphasis on the economic influences of money, resources, production, and trade on political and social events. This course is also recommended for students who are not economics majors. (3-0) R

**ECON 3385 Benefit-Cost Analysis** (3 semester hours) Application of the principles of welfare economics to analysis of the efficiency and distributional impacts of government action. Theoretical foundations and related techniques for measuring and assessing the impacts of different policies and programs. Prerequisite: ECON 3310. (3-0) T

**ECON 4301 Game Theory** (3 semester hours) Rational decision-making in strategic situations where the optimal decision for one player depends upon the strategies of others. The emphasis is on non-zero sum, non-cooperative games in various frameworks: Single-period, repeated, and dynamic games with either symmetric or asymmetric information available to the players are considered. Equilibrium concepts include Nash equilibrium in pure strategies and mixed strategies, Bayesian Nash equilibrium, and refinements of Nash equilibrium such as Subgame Perfect equilibrium are considered. Games are illustrated through the use of economic examples, such as pricing and output decisions of firms, common property usage, bargaining, international trade games, and games of market entry. Prerequisite: ECON 3310. (3-0) Y

**ECON 4310 Managerial Economics** (3 semester hours) The development of tools based on economic principles for managerial decisions about pricing, costing, production organization and capital budgeting. Prerequisites: ECON 3304 and ECON 3310. (3-0) T

**ECON 4320 Public Sector Economics** (3 semester hours) A study of the economics of the public sector, including taxation, public expenditures, and fiscal policy. Examines the theoretical foundation for government intervention in the economy, and the incentive effects of government policies on work, investment, and the spending of income. Prerequisite: ECON 3310. (3-0) R

**ECON 4330 Law and Economics** (3 semester hours) Contracts, torts, and property rights, integrating economic theory concerning efficiency and equity with actual legal cases. Topics include medical malpractice, habitability laws, zoning, crime deterrence, environmental laws, and discrimination. This course is also recommended for students who are not economics majors. (3-0) T

**ECON 4332 Energy and Natural Resources Economics** (3 semester hours) This course is a study in the application of economics to renewable and nonrenewable natural resources problems and to the role of the energy sector in the world economy. Prerequisite: ECON 2302. (3-0) R

**ECON 4333 Environmental Economics** (3 semester hours) A study of people and their environment, emphasizing the social and economic consequences of development and pollution. Alternative public policies for dealing with environmental impacts are explored. Prerequisite: ECON 2302. (3-0) T

**ECON 4334 Experimental Economics** (3 semester hours) This is a course in the use of laboratory methods to study behavior in economics and the social sciences. Students will study state-of-the-art methodology in experimental economics, including experimental design, laboratory technique, financial incentives, and analysis of data. Students will participate in, design, and conduct experiments in bargaining, auctions, asset markets, public goods and commons situations, and risky decision-making. Prerequisite: ECON 3310. (3-0) Y

**ECON 4340 Labor Economics and Human Resources** (3 semester hours) Analyses of wage and employment determination, the role of unions and government in labor market outcomes; discussion of such issues as human capital, discrimination, occupational safety and health, and labor-market segmentation. Prerequisite: ECON 3310. (3-0) T
ECON 4342 Public Policies Toward Business (3 semester hours) Analysis of the economic rationale for government intervention in markets. The course considers direct intervention in the form of price, entry, and/or product quality directives, the economic welfare foundations of public utility economics, and the theory of regulation and deregulation, including indirect regulation through antitrust laws. Topics include collusion, price discrimination, vertical restraints, and other attempts to monopolize a market. Prerequisite: ECON 3310. (3-0) T

ECON 4345 Industrial Organization (3 semester hours) Market structure, firm conduct, and social performance of industries with emphasis on firms’ strategic behavior in price and nonprice competition. Topics include oligopoly pricing, strategic entry deterrence, location strategies, product differentiation, advertising, research and development, and the effect of firms’ conduct on economic welfare and market structure. Prerequisite: ECON 3310. (3-0) T

ECON 4346 Technology, Economy, and Society (3 semester hours) This course explores the ways technology and society shape one another in an economic context. Drawing on theoretical and research contributions from several social sciences, the course devotes primary attention to the economic impacts of so-called information and communication technologies (ICT) on employment and earnings, job creation and destruction, new firm formation and failure, as well as profit and productivity. (3-0) R

ECON 4348 Business and Technology (3 semester hours) This course explores the role of technological innovation in macroeconomic performance and firm-level business activity. It highlights theoretical and research contributions from across the several social sciences, engineering, and management. Topics include all reflect on how technical advances emerge from — and have their impacts shaped within — markets and broader societal organization. The roles of domestic political institutions and public policy, as well as geo-political contexts, will be used to illustrate the broader implications of the technology-business relationship. Prerequisite: ECON 2302 or permission of the instructor. (Same as SOC 4348) (3-0) Y

ECON 4351 Mathematical Economics (3 semester hours) Mathematical formulation of economic theories such as static and dynamic analysis of market behavior and macroeconomic models. Introduction to optimization techniques and linear algebra. Prerequisite: ECON 3304 or MATH 2333 or MATH 2418. (3-0) Y

ECON 4355 Econometrics (3 semester hours) The application of statistical methods to economic analysis; particular attention is given to regression analysis and hypothesis testing. Prerequisite: ECON 3304 or MATH 2333 or MATH 2418. (3-0) Y

ECON 4360 International Trade (3 semester hours) Studies international relationships among national economies with a principal focus on trade relationships. Examines theories of trade, rationale for protectionism, and the foundation of exchange markets. Prerequisite: ECON 3310. (3-0) Y

ECON 4362 Development Economics (3 semester hours) A study of development and economic growth, with a principal focus on less-developed countries. Includes theories and patterns of development, the role of human resources, capital resources, agriculture, and international markets. Prerequisites: ECON 2302 and ECON 3311. (3-0) Y

ECON 4381 History of Economic Ideas (3 semester hours) An investigation into the writings and ideas of economists past and present. Beginning with the ancient Greeks and ending with contemporary radical economic thought, the course places current economic issues into historical perspective. Works by Smith, Malthus, Mill, Marx, Veblen, Schumpeter, Galbraith, and others are covered. This course is also recommended for students who are not economics majors. (3-0) R

ECON 4382 International Finance (3 semester hours) Studies the international financial system, including the foreign exchange markets and the balance of payment accounts and a discussion of international monetary theory. This course fulfills the University's writing requirement. Prerequisite: ECON 3311. (3-0) T

ECON 4384 Corporate Finance (3 semester hours) The theory and techniques of finance in business, including budgeting, cost of capital, and capital markets. Prerequisite: ECON 3304. (3-0) Y

ECON 4385 Business and Economic Forecasting (3 semester hours) Techniques, statistical and otherwise, for forecasting events relevant to business and economic activities. Prerequisite: ECON 3304. (3-0) T

ECON 4396 Selected Topics in Economics (3 semester hours) Subject matter will vary from semester to semester. May be repeated for credit (9 hours maximum). (3-0) R

ECON 4V97 Independent Study in Economics (1-6 semester hours) Independent study under a faculty member's direction. May be repeated for credit (6 hours maximum). Consent of instructor required. (1-6) S

ECON 4V98 Internship (1-6 semester hours) May repeat for credit (6 hours maximum). Consent of instructor required. This course can only be taken Credit/No Credit. (1-6) S

ECON 4V99 Senior Honors in Economics (1-6 semester hours) For students conducting independent research for honors theses or projects. May be repeated for credit (6 hours maximum). (1-6) S
Interdisciplinary Studies Courses Applicable to the Major in Economics

ISSS 3347 The World’s Advanced Economies
ISSS 3349 World Resources and Development
SOC 3336 Culture Regions

Education Courses

ED 3314 The American Public School (3 semester hours) A study of the nature, scope, and purposes of the public school, with emphasis on meeting the needs of the multicultural society of Texas. Successful completion of 20 clock hours of field experience is required and a prerequisite for a grade in this course. Completion of 45 hours of course work and a cumulative GPA of 2.50 is a prerequisite for this course. (3-0) S

ED 3315 Children’s Literature (3 semester hours) Examining literature that is age appropriate for elementary students. Students will explore ways to incorporate a variety of literature in their classes and the national and state standards will be incorporated into the class. Prerequisite: Three hours of lower-division literature or HUMA 1301. (Same as LIT 3315) (3-0) Y

ED 3339 Educational Psychology (3 semester hours) This course will introduce the theoretical foundation underlying various teaching strategies and provide a framework for understanding student development. Emphasis will be on application of theories in actual teacher behavior. (Same as CLDP/PSY 3339) (3-0) S

ED 3340 Math Concepts for Teachers (3 semester hours) Class designed to teach prospective classroom teachers to analyze problem situations, create solution strategies, solve problems, and justify his/her thinking; students will construct concepts of number, patterns, geometry, measurement, probability, and statistics through the use of exploration and investigation. Prerequisite: MATH 1306 or MATH 1314. (3-0) S

ED 3342 Classroom Management Grades EC - 6 (3 semester hours) Principles of teaching, classroom management and organization, and designing instruction and assessment for elementary/middle schools. Emphasis will be given to understanding the teaching environment, understanding learners, and enhancing student achievement. The domains and competencies for the Professional Development TExES are examined. Successful completion of 20 clock hours of field experience is required and a prerequisite for a grade in this course. Department permission required. Must register in Teacher Development Center. (3-0) S

ED 3345 Art, Music, And Physical Development Methods EC – 6th Grade (3 semester hours) Principles and foundations for developing critical thinking and motor skills through art, music, and organized movement. Department permission required. Must register in Teacher Development Center. (3-0) S

ED 3370 Curriculum and Instruction in Mathematics and Computer Information Systems (3 semester hours) Curriculum design and methods of instruction in the mathematical sciences. Successful completion of 20 clock hours of field experience is required and a prerequisite for a grade in this course. Department permission required. Must register in Teacher Development Center. (3-0) S

ED 3371 Curriculum and Instruction in the Natural Sciences (3 semester hours) Curriculum design and methods of instruction in the natural sciences. Successful completion of 20 clock hours of field experience is required and a prerequisite for a grade in this course. Department permission required. Must register in Teacher Development Center. (3-0) S

ED 3380 Curriculum and Instruction in English (3 semester hours) Curriculum design and methods of instruction in English. Successful completion of 20 clock hours of field experience is required and a prerequisite for a grade in this course. Department permission required. Must register in Teacher Development Center. (3-0) S

ED 3382 Curriculum and Instruction in Social Studies (3 semester hours) Curriculum design and methods of instruction in history. Successful completion of 20 clock hours of field experience is required and a prerequisite for a grade in this course. Department permission required. Must register in Teacher Development Center. (3-0) S

ED 4343 Science Methods For Grades EC - 6 (3 semester hours) Subject matter and scope and sequence organization for an integrated science program in the elementary/middle school based on national and Texas curricula and assessment standards. Hands-on activities are included. Department permission required. Must register in Teacher Development Center. (3-0) S

ED 4344 Mathematics Methods For Elementary Teachers (3 semester hours) Subject matter and scope and sequence organization for teaching mathematics in the elementary/middle school, based on national and Texas curricula and assessment standards. Manipulatives and visuals are used to help students master basic mathematics principles and develop critical thinking skills. Department permission required. Must register in Teacher Development Center. (3-0) S
ED 4345 Language Arts/Social Studies Methods For Grades EC - 6 (3 semester hours) Subject matter and scope and sequence organization for teaching language arts and social studies in the elementary/middle school, based on national and Texas curricula and assessment standards. Department permission required. Must register in Teacher Development Center. (3-0) S

ED 4352 Reading I: Learning to Read (3 semester hours) A study of the reading process and theories about teaching reading, understanding the sequential development of reading programs and methods for grouping students and subject matter. This course is required for all students seeking EC – 6 and 4 - 8 ELA certification. (3-0) S

ED 4353 Reading in Secondary Content (3 semester hours) Focuses on using reading and writing in non-language related courses for teachers — Grades 4-8 Generalist, and Science, Mathematics, Social Studies, and Grades 8-12. Required for all content teaching areas. (3-0) S

ED 4355 Reading II: Reading to Learn (3 semester hours) Focuses on developing and using reading, writing, listening, speaking and thinking as tools. Instructional strategies, thematic teaching, study skills, and effective uses for text, media, and other resources will be utilized. Department permission required. Must register in Teacher Development Center. Prerequisite: ED 4352. (3-0) S

ED 4357 Diagnostic Reading (3 semester hours) Examines a variety of assessment and evaluation strategies that are appropriate for the classroom teacher — both formal and informal procedures are introduced. Department permission required. Must register in Teacher Development Center. Prerequisite: ED 4355 or ED 4353. (3-0) S

ED 4358 Chess I: Using Chess in Elementary Schools (3 semester hours) Using chess to teach critical thinking, math, and reading skills in the elementary classroom. This course is also appropriate for chess instructors who wish to incorporate additional academic and humanistic goals into their programs. This course is offered exclusively via distant learning through the UT TeleCampus. (3-0) R

ED 4359 Chess II: Institutional and Cultural Contexts of Chess (3 semester hours) The role of chess as a combination of game, art and sport in various cultural and institutional environments; resources for teachers from local and national chess organizations, foundations and associations. Some knowledge of the rules and strategies of chess are necessary. This course is offered exclusively via distant learning through the UT TeleCampus. (3-0) R

ED 4361 Classroom Management Grades 8 - 12 (3 semester hours) A systematic approach to managing the total classroom environment. Emphasis will be given to practical applications of the research in instructional design, instructional management, and strategies in behavioral management. The domains and competencies for the Pedagogy and Professional Development TExES are examined. Department permission required. Must register in Teacher Development Center. (3-0) S

ED 4362 Classroom Management GR 4 - 8 (3 semester hours) A systematic approach to managing the total classroom environment in the middle school. Emphasis will be given to practical applications of the research in instructional design, instructional management, and strategies in behavioral management for pre- and early teens. The domains and competencies for the Pedagogy and Professional Development TExES are examined. Class includes 20 hours of field experience for 4-8 Generalist students. Department permission required. Must register in Teacher Development Center. (3-0) S

ED 4370 Multicultural Perspectives in Learning (3 semester hours) Focuses on identifying and effectively meeting the needs of a diverse population. Emphasis is placed on tools for planning, collaborative decision making, and implementation of new ideas in the development of programs for minority and non-minority students in academic achievement. (3-0) R

ED 4372 Educational Technology (3 semester hours) Emphasis is placed on the use of technology to support the teaching and learning process. This class is only available on the web. Information about specific instructional applications is presented to provide concrete examples of principles and procedures. Focuses on electronic instructional media, multimedia, telecommunications, multi-user networks, and their real-world applications to the secondary classroom. (3-0) S

ED 4693 Student Teaching – Elementary (6 semester hours) Observation and supervised teaching in the elementary school. Requires full-time attendance in schools for 12 weeks. Prerequisite: Admission to student teaching. Must register in Teacher Development Center. Additional fee attached to course. (6-0) S

ED 4694 Student Teaching - Grades 8 - 12 (6 semester hours) Observation and supervised teaching in a single teaching field. Requires full-time attendance in schools for 12 weeks. Prerequisite: Admission to student teaching. Must register in Teacher Development Center. Additional fee attached to course. (6-0) S

ED 4696 Student Teaching – Grades 4 - 8 (6 semester hours) Observation and supervised teaching in a classroom for Grades 4-8. Requires full-time attendance in school for 12 weeks. Prerequisite: Admission to student teaching. Must register in Teacher Development Center. Additional fee attached to course. (6-0) S

ED 4V90 Independent Study in Education (1-6 semester hours) Independent study under a faculty member’s direction. May be repeated for credit. Consent of instructor required. ([1-6]-0) R
ED 4V95 Special Topics in Education (1-6 semester hours) Subject matter will vary from semester to semester. May be repeated for credit (9 hours maximum). ([1-6]-0) R

Electrical Engineering Course Descriptions

EE 2110 Introduction to Digital Systems Laboratory (1 semester hour) Laboratory to accompany EE 2310. The purpose of this laboratory is to give students an intuitive understanding of digital circuits and systems. Corequisite: CE/EE 2110. (Same as CE/TE 1102) (0-1) S

EE 2300 Linear Algebra for Engineers (3 semester hours) Matrices, vectors, linear systems of equations, Gauss-Jordan elimination, LU factorization and rank. Determinants and solutions of linear systems. Vector spaces, linear dependence/independence, basis, and change of basis. Linear transformations and matrix representation; similarity. Scalar products, orthogonality, Gram-Schmidt process, and QR factorization. Eigenvalues, eigenvectors, and diagonalization; singular-value decomposition. Problem solving using MATLAB. Students cannot get credit for both CE/EE/MECH 2300 and MATH 2418. Prerequisite: MATH 2419. (Same as CE/MECH 2300) (3-0) S

EE 2310 Introduction to Digital Systems (3 semester hours) Introduction to hardware structures and assembly-language concepts that form the basis of the design of modern computer systems. Basic logic circuits. MIPS assembly language. Overview of computer architecture. Corequisite: CE/EE 2110. This class may be offered as either regular or honors sections (H). (Same as CE 2310) (3-0) S

EE 2V99 Topics in Electrical Engineering (1-4 semester hours) May be repeated as topics vary (9 hours maximum). ([1-4]-0) R

EE 3101 Electrical Network Analysis Laboratory (1 semester hour) Laboratory to accompany EE 3301. Design, assembly and testing of linear electrical networks and systems. Use of computers to control electrical equipment and acquire data. Prerequisite: CE/EE/TE 1102. Corequisite: CE/EE/TE 3301. Pre- or corequisite: ECS 3390. (Same as CE/TE 3101) (0-1) S

EE 3102 Signals and Systems Laboratory (1 semester hour) Laboratory on MATLAB and LabVIEW to provide implementation experience on topics covered in EE 3302. Laboratory experiments cover linear time-invariant systems, convolution, Fourier series, continuous Fourier transform, sampling, discrete Fourier transform, analog and digital filtering. Each lab is followed by a design application. Corequisite: CE/EE/TE 3302. Pre- or corequisite: ECS 3390. (Same as CE/TE 3102) (0-1) S

EE 3110 Electronic Devices Laboratory (1 semester hour) Laboratory to accompany EE 3310. Experimental determination and illustration of properties of carriers in semiconductors including carrier drift, carrier diffusion; p-n junctions including forward and reverse bias effects and transient effects; bipolar transistors including the Ebers-Moll model and secondary effects; field effect transistors including biasing effects, MOS capacitance and threshold voltage. Corequisite: CE/EE 3310. Pre- or corequisite: ECS 3390. (Same as CE 3110) (0-1) S

EE 3111 Electronic Circuits Laboratory (1 semester hour) Laboratory to accompany EE 3311. Design, assembly and testing of electronic circuits that use diodes, transistors and operational amplifiers in configurations typically encountered in practical applications. Corequisite: CE/EE 3311. (Same as CE 3111) (0-1) S

EE 3120 Digital Circuits Laboratory (1 semester hour) Laboratory to accompany EE 3320. Design, assembly, and testing of logic circuits. Use of programmable logic devices and simple CAD tools. Corequisite: CE/EE 3320. Pre- or corequisite: ECS 3390. (Same as CE 3120) (0-1) S

EE 3150 Communications Systems Laboratory (1 semester hour) Laboratory to accompany EE 3350. Fundamental elements of communications systems hardware; use of spectrum analyzers and other measurement instruments typically encountered in communication systems; design of active filters in communications systems; analog frequency and amplitude modulators and demodulators; data communication systems. Corequisite: EE 3350. Pre- or corequisite: ECS 3390. (0-1) S

EE 3300 Advanced Engineering Mathematics (3 semester hours) Survey of advanced mathematics topics needed in the study of engineering. Topics include vector differential calculus, vector integral calculus, integral theorems, complex variables,
complex integration, series, residues and numerical methods. Examples are provided from microelectronics and communications. Corequisite: MATH 2420. (Same as CEMECH 3300) (3-0) S

EE 3301 Electrical Network Analysis (3 semester hours) Analysis and design of RC, RL, and RLC electrical networks. Sinusoidal steady state analysis of passive networks using phasor representation; mesh and nodal analyses. Introduction to the concept of impulse response and frequency analysis using the Laplace transform. Prerequisites: MATH 2420, PHYS 2326. Corequisite: CE/EE/TE 3101. (Same as CE/EE 3301) (3-0) S

EE 3302 Signals and Systems (3 semester hours) Introduces the fundamentals of continuous and discrete-time signal processing. Linear system analysis including convolution and impulse response, Fourier series, Fourier transform and applications, discrete-time signal analysis, sampling and z-transform. Prerequisite: CE/EE 3300. Corequisite: CE/EE/TE 3102. (Same as CE/EE 3302) (3-0) S

EE 3310 Electronic Devices (3 semester hours) Theory and application of solid state electronic devices. Physical principles of carrier motion in semiconductors leading to operating principles and circuit models for diodes, bipolar transistors, and field effect transistors. Introduction to integrated circuits. Prerequisite CE/EE/TE 3301. Corequisite: CE/EE 3110. (Same as CE 3310) (3-0) S

EE 3311 Electronic Circuits (3 semester hours) Analysis and design of electronic circuits using diodes, transistors and operational amplifiers with feedback. Gain and stability of basic amplifier circuits using BJT’s, JFET’s and MOSFET’s; classes of amplifiers; performance of ideal and non-ideal operational amplifiers. Prerequisite: CE/EE 3310. Corequisite: CE/EE 3111. (Same as CE 3311) (3-0) S

EE 3320 Digital Circuits (3 semester hours) Boolean logic. Design and analysis of combinational logic circuits using SSI and MSI. Design and analysis of synchronous state machines. State minimization and assignment. Design of arithmetic circuits: adders, multipliers and shifters. Students cannot get credit for both CS 3341 and CE 3320. Prerequisite: CE 3320. Corequisite: CE/EE/TE 3100. (Same as CE/EE 3320) (3-0) S

EE 3341 Probability Theory and Statistics (3 semester hours) Axioms of probability, conditional probability, Bayes theorem, random variables, probability density/mass function (pdf/pmf), cumulative distribution function, expected value, functions of random variables, joint, conditional and marginal pdfs/pmf’s for multiple random variables, moments, central limit theorem, elementary statistics, empirical distribution. Students cannot get credit for both CS/SE 3341 and CE/EE/TE 3341. Prerequisite: MATH 2419. Recommended corequisite: MATH 2420. (Same as CE/MECH/TE 3341) (3-0) S

EE 3350 Communications Systems (3 semester hours) Fundamentals of communications systems. Review of probability theory and Fourier transforms. Filtering and noise. Modulation and demodulation techniques, including amplitude, phase and pulse code. Time division multiplexing. This class may be offered as either regular or honors sections (H). Prerequisites: CE/EE 3300, CE/EE/TE 3302, and CE/EE/TE 3341. Corequisite: EE 3150. (3-0) S

EE 4168 RF/Microwave Laboratory (1 semester hour) This course provides hands-on learning of RF and microwave fundamentals in a laboratory setting. The weekly lab sessions are designed, both in subject material and timeframe, to compliment the theory taught in EE 4368. The goal of this laboratory is to enable students to become familiar with RF test equipment, measurement techniques and design procedures. The second half of this lab involves design of microwave transmission media (primarily microstrip), impedance matching circuits and characterization of microwave transistors, culminating in the complete design, fabrication and test of a single-stage microwave amplifier. Pre- or corequisite: EE 4368. (0-1) Y

EE 4301 Electromagnetic Engineering I (3 semester hours) Introduction to the general characteristics of wave propagation. Physical interpretation of Maxwell’s equations. Propagation of plane electromagnetic waves and energy. Transmission lines. Antenna fundamentals. Prerequisites: PHYS 2326, CE/EE 3300 and CE/EE/TE 3301. (3-0) S

EE 4302 Electromagnetic Engineering II (3 semester hours) Continuation of the study of electromagnetic wave propagation. Metallic and dielectrically guided waves including microwave waveguides and optical fibers. Dipole antennas and arrays. Radiating and receiving systems, plasmas. Propagation of electromagnetic waves in materials and material properties. This course may be used as an honors course. Prerequisite: EE 4301. (3-0) S

EE 4304 Computer Architecture (3 semester hours) Introduction to computer organization and design, including the following topics: CPU performance analysis. Instruction set design, illustrated by the MIPS instruction set architecture. System-level view of computer arithmetic. Design of the datapath and control for a simple processor. Pipelining. Hierarchical memory. I/O systems. I/O performance analysis. Multiprocessing. Students cannot get credit for both CS/SE 3340 and CE/EE 4304. Prerequisite: CE/EE 3320. (Same as CE 4304) (3-0) S

EE 4325 Introduction to VLSI Design (3 semester hours) Introduction to CMOS digital IC design using semi-custom and full-custom design techniques with an emphasis on techniques for rapid prototyping and use of various VLSI design tools. FPGA’s, standard cell and full-custom design styles. Introduction to a wide variety of CAD tools. Prerequisite: CE/EE 3320 (or, for CS majors, CS/SE 4340). (3-0) T

EE 4330 Integrated Circuit Technology (3 semester hours) Principles of design and fabrication of integrated circuits. Bipolar and MOS technologies. Passive and active component performance, fabrication techniques including epitaxial growth, photolithography, oxidation, diffusion, ion-implantation, thin and thick film components. Design and layout of integrated devices. Relations between layout and fabrication technique. Prerequisite: CE/EE 3310. (3-0) T

EE 4334 Numerical Methods in Engineering (3 semester hours) Computer arithmetic and error analysis. Solution of linear equations, roots of polynomial equations, interpolation and approximation, numerical differentiation and integration, solution of ordinary differential equations. Emphasis on engineering applications and numerical software. Students cannot get credit for both CS/MATH 4334 and CE/EE/TE 4334. Prerequisites: CE/EE 2300, CE/EE/TE 3300, and knowledge of a high level programming language. (Same as CE/TE 4334) (3-0) Y

EE 4340 Analog Integrated Circuit Analysis and Design (3 semester hours) Analog integrated circuits and systems. Analysis and design of linear amplifiers, including operational, high-frequency, broad-band and feedback amplifiers. Use of monolithic silicon systems. Prerequisite: CE/EE 3311. (3-0) T

EE 4341 Digital Integrated Circuit Analysis and Design (3 semester hours) Digital integrated circuits. Large signal model for bipolar and MOS transistors. MOS inverter and gates. Propagation delay and noise margin. Dynamic logic concepts. Bipolar transistor inverters and gates, regenerative logic circuits, memories. Prerequisites: CE/EE 3311, CE/EE 3320. (3-0) T

EE 4360 Digital Communications (3 semester hours) Information, digital transmission, channel capacity, delta modulation, and differential pulse code modulation are discussed. Principles of coding and digital modulation techniques such as Amplitude Shift Keying (ASK), Frequency Shift Keying (FSK), Phase Shift Keying (PSK), and Continuous Phase Frequency Shift Keying (CPFSK) are introduced. M-ary signaling such as Quadrature amplitude and phase keying, and M-ary PSK and FSK are also discussed. Prerequisite: EE 3350. (3-0) T

EE 4361 Introduction to Digital Signal Processing (3 semester hours) An introduction to the analysis and design of discrete linear systems, and to the processing of digital signals. Topics include time and frequency domain approaches to discrete signals and systems, the Discrete Fourier Transform and its computation, and the design of digital filters. Prerequisite: CE/EE/TE 3302. (3-0) T

EE 4365 Introduction to Wireless Communication (3 semester hours) Introduction to the basic system concepts of cellular telephony. Mobile standards, mobile system architecture, design, performance and operation. Voice digitization and modulation techniques; PCS technologies. Prerequisite: EE 3350. (Same as TE 4365) (3-0) Y

EE 4367 Telecommunication Networks (3 semester hours) Trunking and queuing, switching technologies: voice, data, video, circuit switching and packet switching, transmission technologies and protocols, transmission media - copper, fiber, microwave, satellite, protocols - bipolar formats, digital hierarchy, optical hierarchy, synchronization, advanced switching protocols and architectures; frame relay, ATM, HDTV, SONET. Prerequisite or Corequisite: EE 3350. (Same as TE 4367) (3-0) Y

EE 4368 RF Circuit Design Principles (3 semester hours) Principles of high-frequency design, transmission lines, the Smith chart, impedance matching using both lumped and distributed components, and simple amplifier design. Prerequisites: EE 3310 and EE 4301. (3-0) Y

EE 4388 Senior Design Project I (3 semester hours) First of two sequential semesters devoted to a team project that engages students in the full engineering design process. The goal of senior design projects is to prepare the student to run/participate in engineering projects related to an appropriate industry. Thus, all project teams are to follow standard industrial practices and methods. Teams must carry the engineering project to completion, examining real world constraints, following applicable industrial and business standards. Such constraints may include but are not limited to: economic, environmental, industrial standards, team time/resource management and cross-disciplinary/departmental result integration. (Students are encouraged to work in teams that include collaborative design interaction, but may work on individual projects as well, provided there is a collaboration component. Additionally, cross disciplinary/departmental teams are encouraged but not required.) In Senior Design I, project proposals will be written, reviewed and approved. Initial designs will be completed and corresponding constraints will be determined. All students will participate in a public oral presentation following departmental approved guidelines at a departmental approved time and location. Teams will also submit a written end of semester progress report and documented team communication (complete sets of weekly reports and/or log books) following guidelines approved by the faculty. Students must have completed ECS 3390 and one of the following prerequisite sequences: (CE 3311, CE 3320, CE 3346, and CE 3354), or (EE 3300, EE 3302, EE 3311, and EE 3320), or (EE 3300, TE 3302, and TE 3346; pre- or corequisite EE 3350). (Same as CE/TE 4388) (3-0) S
EE 4389 Senior Design Project II (3 semester hours) Continuation of the Senior Design project begun in the previous semester. In Senior Design II, projects based on approved project proposals will be completed. All limitations of the design will be determined and addressed. All students will participate in a public oral presentation following faculty-approved guidelines at a faculty-approved time and location. Teams will also submit a written final report and documented team communication (complete sets of weekly reports and/or log books) following faculty-approved guidelines. Prerequisite: CE/EE/TE 4388. (Same as CE/TE 4389) (3-0) S

EE 4390 Computer Networks (3 semester hours) An introduction to packet based computer and data communication networks, including the OSI model, Internet, TCP/IP, ATM, Ethernet, Frame Relay, and Local Area Networks. Enterprise network design procedures are introduced in conjunction with IP routing, VPN, MPLS and VOIP. Students cannot get credit for both CE/CS/TE 4390 and EE 4390. Pre- or Corequisite: EE 3350. (3-0) S

EE 4391 Technology of Plasma Class and Laboratory (3 semester hours) Plasmas are critical to making the best electronic devices. This class and laboratory will be an introduction to the technology required to make and use these plasmas. Topics include: high-vacuum technology (gas properties, pumps, pressure gauges, flow-meters, gas composition analysis) and plasma technology (etch, deposition, and lamps). Students will make hands-on measurements in the laboratory that reinforce the theory presented in class. Prerequisites: CE/EE 3300 and CE/EE 3310. Recommended: EE 3341. (2-1) Y

EE 4392 Introduction to Optical Systems (3 semester hours) Operating principles of optical communications systems and fiber optic communication technology. Lightwave fundamentals, characteristics of integrated optic waveguides and optical fibers, attenuation and dispersion, operating principles of optical sources, detectors and optical amplifiers, optical transmitters and receivers, modulation techniques, effect of noise in optical systems, system design fundamentals, network topologies. Prerequisites: CE/EE/TE 3302 and PHYS 2326. (3-0) T

EE 4399 Senior Honors in Electrical Engineering (3 semester hours) For students conducting independent research for honors theses or projects. This course may be used as an honors course. (3-0) R

EE 4V95 Undergraduate Topics in Electrical Engineering (1-9 semester hours) Subject matter will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). ([1-9]-0) R

EE 4V97 Independent Study in Electrical Engineering (1-9 semester hours) Independent study under a faculty member's direction. May be repeated for credit as topics vary (9 hours maximum). Consent of instructor required. ([1-9]-0) R

EE 4V98 Undergraduate Research in Electrical Engineering (1-9 semester hours) Topics will vary from semester to semester. May be repeated for credit (9 hours maximum). This course may be used as an honors course. ([1-9]-0) R

Engineering and Computer Science Co-Op Course Descriptions

ECSC 3177 CS IPP Assignment (1 semester hour) Work in an approved, supervised, professional, computer science position. Students will complete an IPP Work Report including a written narrative focusing on the accomplishments and learning gained through the IPP experience. May be repeated. (1-0) Y

ECSC 3179 ENG IPP Assignment (1 semester hour) Work in an approved, supervised, professional, engineering position. Students will complete an IPP Work Report including a written narrative focusing on the accomplishments and learning gained through the IPP experience. May be repeated. (1-0) Y

Engineering and Computer Science Course Descriptions

ECS 3361 Social Issues and Ethics in Computer Science and Engineering (3 semester hours) This course exposes students to major theoretical approaches and modes of thinking in the social sciences while exploring a range of important issues in computing and engineering, and the interrelationship between technology and important elements of social systems. Areas of exploration include the interface between technology, culture, economy, gender, politics, and religion. Issues of professional ethics, computer crime, privacy, intellectual property, the balance between scientific advances and the acceptability of risk, globalization and the relevance of constitutional issues are all explored by drawing upon empirical research and important research methodologies in the social sciences. (Same as SOCS 3361) (3-0) Y

ECS 3390 Professional and Technical Communication (3 semester hours) Expands students' professional and team communication skills and strategies in technical contexts. Integrates writing, speaking and group communication by developing and presenting technical information to different audiences. Written assignments focus on creating professional technical
documents, such as proposals, memos, abstracts, reports and letters. Presentation assignments emphasize planning, preparing
and delivering dynamic, informative and persuasive presentations. Attendance at first class mandatory. Prerequisite: RHET 1302
and junior standing. (3-0) S.

Film Studies Course Descriptions

FILM 2332 Understanding Film (3 semester hours) Explores artistic, philosophical, political, and psychological dimensions of
the motion-picture experience. This course analyzes visual language, cinematic codes, and the ways that films can embody or
criticize popular ideas and attitudes. Emphasis may be on film analysis, film compared to the other arts, the functions of art, films
as artifacts, the relationship between the filmmakers and the film, the filmmakers and society, or theories of film production and
reception. (3-0) S

FILM 2V71 Independent Study in Film (1-3 semester hours) Independent study under a faculty member’s direction.
Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). (L-3)-0 R

FILM 3321 Film in Historical Context (3 semester hours) Films in history and as history. Historical studies of major films,
genres, and movements from the silent era to the present. Topics may include the history of documentary, fiction, or experimental
film and video; film genres such as the western, the horror film, or the melodrama viewed in a historical context. Courses on film
movements focus on a national cinema at a specific time (such as German Expressionism, Soviet Socialist Realism, Italian Neo-
Realism, or French New Wave). May be repeated for credit as topics vary (9 hours maximum). Prerequisite: FILM 2332 or
equivalent. (3-0) Y

FILM 3325 Film Authorship (3 semester hours) Film history focused through one to two directors per course, from the
directors’ early efforts through the final films they directed. Lectures, discussions, and film screenings are designed to explore
films as part of cultural history, cinema history, and the history of criticism, including various theories about the nature of film
authorship. May be repeated for credit as directors vary (6 hours maximum). Prerequisite: FILM 2332 or equivalent. (3-0) R

FILM 3342 Topics in Film (3 semester hours) Explores the changing nature, practices, and principles of film. Topics may focus
on the varied nature of the collaborative filmmaking process, the rise of cinema as a public entertainment, thematic issues, or
relationships between film and social change. Sections may be devoted to independent cinema, contemporary international
cinema, or aspects of filmmaking such as scriptwriting. May be repeated for credit as topics vary (9 hours maximum). Prerequisite:
FILM 2332 or equivalent. (3-0) R

FILM 4V71 Independent Study in Film (1-3 semester hours) Independent study under a faculty member’s direction.
Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). Prerequisite: Upper-
division standing, and completion of all lower-division requirements in AP and permission of the instructor. (L-3)-0 R

Foreign Language Course Descriptions

ARAB 1311 (ARAB 1311) Beginning Arabic I (3 semester hours) This course will integrate acquisition of the four language
skills (listening, speaking, reading, and writing) with study of Arab culture and civilization. (3-0) Y

ARAB 1312 (ARAB 1312) Beginning Arabic II (3 semester hours) This course is a continuation of Beginning Arabic I. It will
integrate acquisition of the four language skills (listening, speaking, reading and writing) with study of Arab culture and
civilization. (3-0) Y

ARAB 2311 (ARAB 2311) Intermediate Arabic I (3 semester hours) This course is a continuation of Beginning Arabic. It will
include review and application of skills in listening comprehension, speaking, reading, and writing. The course emphasizes
conversation, vocabulary acquisition, reading, composition, and culture. (3-0) Y

ARAB 2312 (ARAB 2312) Intermediate Arabic II (3 semester hours) This course is a continuation of Intermediate Arabic I.
It will include review and application of skills in listening comprehension, speaking, reading, and writing. The course emphasizes
conversation, vocabulary acquisition, reading, composition and culture. (3-0) Y

CHIN 1311 (CHIN 1311) Beginning Chinese I (3 semester hours) This course will integrate acquisition of the four language
skills (listening, speaking, reading and writing) with study of Chinese culture and civilization. (3-0) Y

CHIN 1312 (CHIN 1312) Beginning Chinese II (3 semester hours) This course is a continuation of Beginning Chinese I. It will
integrate acquisition of the four language skills (listening, speaking, reading and writing) with study of Chinese culture and
civilization. (3-0) Y
**Course Descriptions - Foreign Language**

**CHIN 2311 (CHIN 2311) Intermediate Chinese I (3 semester hours)** This course is a continuation of Beginning Chinese. It will include review and application of skills in listening comprehension, speaking, reading, and writing. The course emphasizes conversation, vocabulary acquisition, reading, composition, and culture. (3-0) Y

**CHIN 2312 (CHIN 2312) Intermediate Chinese II (3 semester hours)** This course is a continuation of Intermediate Chinese I. It will include review and application of skills in listening comprehension, speaking, reading, and writing. The course emphasizes conversation, vocabulary acquisition, reading, composition, and culture. (3-0) Y

**FREN 1311 (FREN 1311) Beginning French I (3 semester hours)** This course will integrate acquisition of the four language skills (listening, speaking, reading, and writing) with study of French culture and civilization. *(3-0) Y*

**FREN 1312 (FREN 1312) Beginning French II (3 semester hours)** This course is a continuation of Beginning French I. It will integrate acquisition of the four language skills (listening, speaking, reading and writing) with study of French culture and civilization. *(3-0) Y*

**FREN 2311 (FREN 2311) Intermediate French I (3 semester hours)** This course is a continuation of Beginning French I. It will include review and application of skills in listening comprehension, speaking, reading, and writing. The course emphasizes conversation, vocabulary acquisition, reading, composition, and culture. *(3-0) Y*

**FREN 2312 (FREN 2312) Intermediate French II (3 semester hours)** This course is a continuation of Intermediate French I. It will include review and application of skills in listening comprehension, speaking, reading, and writing. The course emphasizes conversation, vocabulary acquisition, reading, composition and culture. *(3-0) Y*

**GERM 1311 (GERM 1311) Beginning German I (3 semester hours)** This course will integrate acquisition of the four language skills (listening, speaking, reading and writing) with study of German culture and civilization. *(3-0) Y*

**GERM 1312 (GERM 1312) Beginning German II (3 semester hours)** This course is a continuation of Beginning German I. It will integrate acquisition of the four language skills (listening, speaking, reading and writing) with study of German culture and civilization. *(3-0) Y*

**GERM 2311 (GERM 2311) Intermediate German I (3 semester hours)** This course is a continuation of Beginning German. It will include review and application of skills in listening comprehension, speaking, reading, and writing. The course emphasizes conversation, vocabulary acquisition, reading, composition, and culture. *(3-0) Y*

**GERM 2312 (GERM 2312) Intermediate German II (3 semester hours)** This course is a continuation of Intermediate German I. It will include review and application of skills in listening comprehension, speaking, reading, and writing. The course emphasizes conversation, vocabulary acquisition, reading, composition, and culture. *(3-0) Y*

**GREK 1312 Beginning Greek (3 semester hours)** The grammar and syntax of ancient Greek. Discussion of the Greek sensibility, which is inseparable from the Greek language. Some readings of short poems of Archilochus, Sappho, and Anacreon. Graduated readings from Aesop and Herodotus. *(3-0) R*

**GREK 2312 Intermediate Greek (3 semester hours)** Readings in selected Greek poetry and prose. Prerequisite: GREK 1312 or permission of instructor. *(3-0) R*

**LANG 1311 Beginning Language Instruction I (3 semester hours)** This course offers beginning instruction in foreign languages not taught on a regular basis. It integrates acquisition of language skills (listening, speaking, reading, and writing) with study of culture and civilization. Languages will vary but may include Italian, Hindi, or Russian. May be repeated for credit as language varies (6 hours maximum). *(3-0) R*

**LANG 1312 Beginning Language Instruction II (3 semester hours)** This course is a continuation of LANG 1311 Beginning Language Instruction I. It will include review and application of skills in listening comprehension, speaking, reading, and writing. The course emphasizes conversation, vocabulary acquisition, reading, composition, and culture. Languages will vary but may include Italian, Hindi, or Russian. May be repeated for credit as language varies (6 hours maximum). *(3-0) R*

**LANG 2311 Intermediate Language Instruction I (3 semester hours)** This course is a continuation of beginning instruction in foreign languages not taught on a regular basis. The course integrates acquisition of language skills (listening, speaking, reading, and writing) with study of culture and civilization. Languages will vary but may include Italian, Hindi, or Russian. May be repeated for credit as language varies (6 hours maximum). *(3-0) R*

**LANG 2312 Intermediate Language Instruction II (3 semester hours)** This course is a continuation of LANG 2311 Intermediate Language Instruction I. It will include review and application of skills in listening comprehension, speaking, reading, and writing. The course emphasizes conversation, vocabulary acquisition, reading, composition, and culture. Languages will vary but may include Italian, Hindi, or Russian. May be repeated for credit as language varies (6 hours maximum). *(3-0) R*

**LANG 2342 Topics in Language (3 semester hours)** Subject matter will vary from semester to semester. May be repeated for credit as topics vary (6 hours maximum). *(3-0) R*
LANG 3342 Advanced Language Instruction (3 semester hours) This course is a continuation of instruction in foreign languages not taught on a regular basis. Languages will vary. May be repeated for credit as topics vary (6 hours maximum). (3-0) R

LANG 3348 Topics in Language (3 semester hours) Subject matter will vary from semester to semester. May be repeated for credit as topics vary (6 hours maximum). (3-0) R

LANG 4348 Advanced Topics in Language (3 semester hours) Subject matter will vary from semester to semester. May be repeated for credit as topics vary (6 hours maximum). (3-0) R

SPAN 1312 (SPAN 1312) Beginning Spanish (3 semester hours) This course will integrate acquisition of the four language skills (listening, speaking, reading, and writing) with study of Spanish culture and civilization. It will combine classroom instruction with the use of an interactive multimedia language lab that will enable the students to have access to sound and images from authentic Spanish language videos, videodiscs, CD-ROMs, and audiotapes. Use of the multimedia language lab is required. (3-0) Y

SPAN 2312 (SPAN 2312) Intermediate Spanish (3 semester hours) This course is a continuation of beginning Spanish. Prerequisite: SPAN 1312 or permission of instructor. (3-0) Y

SPAN 3360 Functional Spanish for Cultural Awareness I (3 semester hours) The development of spoken and written Spanish through the use of diverse cultural materials from Spain and Latin America, such as selections from print and broadcast media, literature, music, and the visual arts. Prerequisite: 12 hours of college-level Spanish, four years of high school Spanish, or permission of the instructor. (3-0) R

SPAN 3361 Functional Spanish for Cultural Awareness II (3 semester hours) Continuation of SPAN 3360. Prerequisite: Successful completion of SPAN 3360, 15 hours of college-level Spanish, or permission of the instructor. (3-0) R

SPAN 3363 Spanish Composition and Style (3 semester hours) Designed to offer students the opportunity to perfect linguistic skills and to comprehend selected works of Peninsular and Spanish-American writers. Prerequisite: SPAN 2312 or the equivalent, or permission of the instructor. (3-0) R

SPAN 3364 Spanish Culture (3 semester hours) This course is designed to offer students of Spanish the opportunity to perfect the four language skills (listening, speaking, reading, and writing). In addition to reviewing the most intricate aspects of Spanish grammar, students will be introduced to selected works by Peninsular and Spanish American writers, literary analysis, discussion, and translation of some of their works. This class will be conducted largely in Spanish. Prerequisite: SPAN 3365 or equivalent, or permission of the instructor. (3-0) R

SPAN 3365 Advanced Spanish (3 semester hours) The course is designed to help students to build continuous vocabulary, increase the understanding of the Hispanic culture, and augment speaking fluency. The course will cover reading comprehension, discussion of literature, composition, conversation, and Total Physical Response Storytelling (TPRS) activities. Topics may vary. May be repeated for credit (6 hours maximum). Prerequisite: SPAN 2312 or equivalent or permission of instructor. (3-0) R

SPAN 3441 Medical Spanish (4 semester hours) This course is designed to introduce students to the utilization of the Spanish language in the Health Care arena. A combination of written and oral exercises will be employed in a workshop atmosphere. Prerequisite: Introductory Spanish or the equivalent. (4-0) Y

SPAN 4364 Advanced Spanish Culture (3 semester hours) This course will provide students with a basic knowledge of and appreciation for the Spanish language, culture and civilization as found in Spain, Latin America, and the Hispanic communities in the U.S.A. The traditional elements and new trends of the culture as revealed in the arts, music, film and literature will be covered. Classes will be conducted in Spanish with occasional use of English for clarification of difficult concepts only. Prerequisite: SPAN 3364 or equivalent or permission of instructor. (3-0) R

VIET 1311 (VIET 1311) Beginning Vietnamese I (3 semester hours) This course will integrate acquisition of the four language skills (listening, speaking, reading, and writing) with study of Vietnamese culture and civilization. (3-0) R

VIET 1312 (VIET 1312) Beginning Vietnamese II (3 semester hours) This course is a continuation of Beginning Vietnamese I. It will integrate acquisition of the four language skills (listening, speaking, reading, and writing) with study of Vietnamese culture and civilization. (3-0) R

VIET 2311 (VIET 2311) Intermediate Vietnamese I (3 semester hours) This course is a continuation of Beginning Vietnamese. It will include review and application of skills in listening comprehension, speaking, reading, and writing. The course emphasizes conversation, vocabulary acquisition, reading, composition, and culture. (3-0) R

VIET 2312 (VIET 2312) Intermediate Vietnamese II (3 semester hours) This course is a continuation of Intermediate Vietnamese I. It will include review and application of skills in listening comprehension, speaking, reading, and writing. The course emphasizes conversation, vocabulary acquisition, reading, composition, and culture. (3-0) R
## Gender Studies Course Descriptions

**GST 2300 Introduction to Gender Studies** *(3 semester hours)* An introduction to the way gender shapes individuals, social institutions and culture. Examines gender, class, sexuality, race/ethnicity, and nationality as interactive systems. Topics include biological arguments about gender and sexuality; the cultural construction of gender; the psychology of sex roles; the ways gender shapes families, workplaces and other social institutions. (Same as SOC 2300) (3-0) Y

**GST 3301 Psychology of Gender** *(3 semester hours)* An overview of individualistic and interactional perspectives in biology, personality, and social relations. With a focus on the individual, gender in thought, emotion, personal relationships, and self-concept is explored. (Same as PSY 3324) (3-0) Y

**GST 3302 Gender in Western Thought** *(3 semester hours)* Identifies gendered approaches within the history of ideas, including philosophy, theology, and literature. Universal truths about human nature, particularly with regard to sex and gender, are located within the intellectual milieu of various writers and within the larger body of Western thought. (Same as HIST 4380 when topic is Gender in Western Thought) (3-0) T

**GST 3303 Gender, Society and Politics** *(3 semester hours)* Addresses the influence of gender on the distribution of public goods and the way gender, interacting with race and class, shapes social, political, and economic institutions. Introduces students to traditional notions of rights and citizenship as conceptual underpinnings for contemporary political and legal debates (on welfare, reproductive rights, childcare, job segregation, women in the military, prostitution). (Same as SOC 3354 and GOVT 3354) (3-0) Y

**GST 4311 Gender and Education** *(3 semester hours)* An examination of the impact of gender, race, and class on the educational experiences of men and women. Considers the way educational institutions both empower individuals and reproduce social inequalities based on class, gender, ethnicity, and sexuality. Topics include Enlightenment discussions of gender and reason, co-ed vs. single sex education, curriculum transformation efforts to include the history and experience of women and ethnic minorities, feminist and critical pedagogies. (Same as SOC 4311) (3-0) Y

**GST 4379 Topics in Gender Studies** *(3 semester hours)* May be repeated for credit as topics vary (9 hours maximum). (3-0) R

**GST 4380 Women, Work, and Family** *(3 semester hours)* An examination of the relationship between women’s work for pay in the marketplace and their unpaid work in homes across time and in different countries. Topics include the historical separation of work from home under capitalism; initiatives division of household labor between men and women; public policy (socialized/commercial housework and daycare, family leave, telecommuting, part-time and flex-time work) designed to make juggling work and family easier; the ways class, race, and ethnicity constrain and enable women’s choices. (Same as SOC 4380) (3-0) R

**GST 4381 Senior Honors Research** *(3 semester hours)* Designed for students conducting original research. Consent of instructor is required. (3-0) R

**GST 4382 Senior Honors in Gender Studies** *(3 semester hours)* To qualify for magna or summa cum laude if the required number of hours are taken at UTD. A suitable ranking of this paper/project is required to qualify for honors. Consent of instructor is required. (3-0) R

**GST 4V80 Independent Study** *(1-6 semester hours)* May be repeated for credit. Consent of instructor required. ([1-6]-0) R

## Geography Course Descriptions

**GEOG 2302 (GEOL 1305) The Global Environment** *(3 semester hours)* An introduction to the physical aspects of the world’s geography emphasizing the interrelationships between the earth and its climate, vegetations, soils, and landforms. Provides a global perspective on the physical environment and the interactions between global systems to produce regional differences. (Same as GEOS 2302) (3-0) T

**GEOG 2303 People and Place: An Introduction to World Geographic Regions** *(3 semester hours)* Provides an introduction to the human geography of the world by examining how the key concepts of place and space can be used to understand the character and interactions of major regions of the world including Southwest Asia, Southeast Asia, Western Europe, Eastern Europe, the Middle East, Middle America, the Caribbean, the Pacific World, North America, South America, and Sub-Saharan Africa. (3-0) Y

**GEOG 3304 Tools for Spatial Analysis** *(3 semester hours)* An introduction to the primary methods used in geographic analysis. Topics include spatial statistics, cartography, and geographic information systems (GIS). This course is designed to provide a foundation for all other upper-level Geography courses. Prerequisite: SOCS 3305 or STAT 1342. (3-0) Y
GEOG 3323 Geographic Information Systems (3 semester hours) Provides an introduction to Geographic Information Systems, a software technology for the storage, analysis and display of spatial information. Specific GIS methods are covered for use in a variety of different applications areas and disciplines, including public administration, criminology, demographic, economic and marketing analysis, transportation studies, and environmental/geological applications. Industry standard GIS software tools are used to apply these methods. (Same as PA 3323 and SOCS 3323) (3-0) Y

GEOG 3331 Urban Growth and Structure (3 semester hours) Deals with the economic and spatial processes underlying urban growth and regional development, and with the structural and demographic characteristics of urban areas as well as the social and psychological dynamics of urban life. (Same as ECON 3331) (3-0) T

GEOG 3341 Politics, Place and Space (3 semester hours) Provides an introduction to political geography by asking the question: does location matter in this era of increasing globalization? Examines political institutions and behavior in a spatial context through a wide range of themes, from international affairs, international law and peace building, geopolitics, and the development of territorial states to the geography of elections to local political struggles of non-governmental organizations. (3-0) R

GEOG 3357 Spatial Dimensions of Health and Disease (3 semester hours) Examines the spatial dimensions of health, disease and the public health and health care systems. Provides an introduction to spatial epidemiology and a bridge to the terminology of medical and health care professionals. (Same as SOC 3357) (3-0) R

GEOG 3358 Population: Concepts and Issues (3 semester hours) Introduces the key measures, data sources, concepts and theories to document and understand the variation of fertility and mortality, interregional migration, population distributions and their compositions in space and time. Historic, present and future population trends are discussed and analyzed in relation to biological principles and environmental challenges as well as diverging societal organizations and economic constraints. (Same as SOC 3358) (3-0) R

GEOG 3370 The Global Economy (3 semester hours) Considers the changing relationships of population, resources, and the economy; the transformation of classical spatial economics; and the processes producing increasing globalization. Particular attention is paid to technological change and to the dynamics of world trade and investment. (Same as ECON 3370) (3–0) T

GEOG 3372 Population and Development (3 semester hours) Examines the relations between population, development, and the environment. Essential components of demographic analysis lay the foundation for a critical evaluation of demographic transition theory. Other topics include public health, population structure and life chances, cultural differences and women's status, aging, environmental impacts, and population policy. (Same as ECON 3372 and SOCS 3372) (3–0) T

GEOG 3373 Transportation and Logistics (3 semester hours) Focuses on concepts and methods for decision making in transportation based on both geographic and economic factors. Considers the relationships between location and cost in the context of the classic transportation problem and other location models in transportation. Examines project cost/benefit evaluation, urban travel demand modeling, transportation pricing, and issues of accessibility and economic opportunity. Prerequisite: ECON 2302 or equivalent. (Same as ECON 3373) (3-0) R

GEOG 3375 Transportation and Cities (3 semester hours) Explores the relationship between urban areas and transportation systems. Examines economics of transportation in cities, transportation and urban form, highway congestion, environmental impacts of transportation, public transit, transportation and labor markets, and political influences on transportation planning. (Same as ECON 3375) (3-0) R

GEOG 3377 Urban Planning and Policy (3 semester hours) Explores important substantive areas and concepts in the field of urban and regional planning and current urban planning and policy issues and debates. Topics include: forces that have historically guided and are currently guiding U.S. urbanization; land use, growth management, transportation and traffic congestion, economic development, housing and community development, environmental planning; legal, environmental, governmental contexts. (Same as PA 3377 and SOCS 3377) (3-0) Y

GEOG 3381 Africa, South of the Sahara (3 semester hours) Africa is a complex, cosmopolitan continent with a long history of politics, conflict, products and people. This course provides a broad survey of Africa, focusing especially on current political, economic and social conflicts. Topics to be covered include: historical patterns of trade, migration, and regional integration; the impact of colonialism; nationalism and revolution; the impact of the “Development Decades”; contemporary patterns of agrarian change, urbanization, and industrialization; changing gender relations; contemporary environmental challenges; political struggles and democratization; regional conflicts and cooperation; and the impact of HIV/AIDS as a social-economic crisis. (3-0) R

GEOG 4380 Spatial Concepts and Organization (3 semester hours) Examines the recurring patterns of physical and human objects on the Earth’s surface, the flows or circulations among them, and the spatial concepts and theories which have been advanced to help understand and explain these spatial arrangements. Provides a fundamental understanding of spatial processes, concepts and theories. (3-0) Y

GEOG 4396 Selected Topics in Geography (3 semester hours) Subject matter will vary from semester to semester. May be repeated for credit (9 hours maximum). (3-0) R
**GEOG 4V97 Independent Study in Geography** *(1-6 semester hours)* Independent study under a faculty member’s direction. May be repeated for credit (6 hours maximum). Consent of instructor required. *(1-6)-0 S*

**GEOG 4V98 Internship** *(1-6 semester hours)* May repeat for credit up to a total of six semester credit hours. Consent of instructor required. This course can only be taken Credit/No Credit. *(1-6)-0 S*

**GEOG 4V99 Senior Honors in Geography** *(3 semester hours)* For students conducting independent research for honors theses or projects. May be repeated for credit (6 hours maximum). *(1-6)-0 S*

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**Geosciences Course Descriptions**

**GEOS 1103 (GEOL 1103) Physical Geology Laboratory** *(1 semester hour)* A laboratory to accompany GEOS 1303. The exercises include mineral and rock identification. Topographic maps, geologic maps, and aerial photographs are used to study surface landforms, geologic phenomena and tectonic processes. Pre- or corequisite: GEOS 1303. *(0-3) S*

**GEOS 1104 (GEOL 1104) History of Earth and Life Laboratory** *(1 semester hour)* A laboratory to accompany GEOS 1304. Exercises include: fossil identification, stratigraphy and correlation, the geologic time scale, age-determination techniques, and maps. Pre- or corequisite: GEOS 1304. *(0-3) Y*

**GEOS 1303 (GEOL 1303) Physical Geology** *(3 semester hours)* Introduction to the Earth as a unique planet. The course investigates minerals and rocks which make up the Earth. The structure of the Earth and dynamics of its internal mechanisms are explored. Plate tectonics and surface processes which sculpt the Earth are the topics of the second half of the course. Other planets and celestial bodies within the solar system are contrasted with Earth. Field trip. *(3-0) S*

**GEOS 1304 (GEOL 1304) History of Earth and Life** *(3 semester hours)* Introduction to the history of the Earth. The history of life and an introduction to the principles of paleontology, stratigraphy and global change will be discussed. All topics will be discussed in the context of the tectonic evolution of North America. Field trip. Prerequisites: GEOS 1303 and GEOS 1103. *(3-0) Y*

**GEOS 2302 (GEOL 1305) The Global Environment** *(3 semester hours)* An introduction to the physical aspects of the world’s geography, emphasizing the interrelationships between the Earth and its climate, vegetation, soils, and landforms. Provides a global perspective on the physical environment and the interactions between global systems to produce regional differences. *(Same as GEOG 2302) (3-0) Y*

**GEOS 2406 Geospatial Science and Methods** *(4 semester hours)* Remote sensing and Geographic Information System (GIS) science and methods as applied to geospatial aspects of geosciences. Introduction to geospatial software in geosciences. Prerequisites: GEOS 1303 and 1103. Recommended prerequisite: GEOS 2409. *(4-0) Y*

**GEOS 2409 (GEOL 2409) Rocks and Minerals** *(4 semester hours)* Introduction to crystallography, mineralogy, and petrography. Laboratory course. Pre- or corequisites: GEOS 1303 and 1103. *(3-3) Y*

**GEOS 2V08 Special Topics in Geology or Geophysics** *(1-4 semester hours)* Subject matter will vary from semester to semester. Consent of instructor required. May be repeated for credit (9 hour maximum). *(1-4)-0 R*

**GEOS 3110 Environmental Geology Lab** *(1 semester hour)* Field observation and measurement of processes and phenomena in environmental geology. Activities include stream and groundwater flow and chemistry measurements, hydrogeologic mapping, and environmental site assessment. Most class meetings are outdoors. *(0-3) Y*

**GEOS 3121 The Biosphere: Origin, Evolution and Mass Extinctions** *(1 semester hour)* This course presents an overview of the significant events in the history of life on Earth, how the presence of life has modified the Earth’s environment, and the catastrophic events that have caused mass extinctions of organisms. May not be taken for credit with or after taking GEOS 3350. Not eligible for auditing. The course will last approximately 1 month during a semester. *(1-0) T*

**GEOS 3122 Coal in Our Society** *(1 semester hour)* Coal plays an important role in the U.S. energy mix and a critical role in Texas society. Yet, it may be the most misunderstood natural resource. It is the objective of this course to familiarize the students with the origin, properties, and uses of coal and examine how coal use may impact the environment and human health. This will be accomplished by exploring the facts and fallacies surrounding coal in our society. There will be a field trip to a coal mine and/or a coal-burning power plant. Not eligible for auditing. The course will last approximately 1 month during a semester. *(1-0) T*

**GEOS 3123 Coral Reefs** *(1 semester hour)* This course examines the biology, chemistry, and geology associated with modern and ancient reef building corals. Human impact on this fragile ecosystem and the role that coral reefs play in global warming are explored. Not eligible for auditing. The course will last approximately 1 month during a semester. *(1-0) Y*

**GEOS 3124 Geology and Human Health** *(1 semester hour)* Introduction to the impacts of geologic materials and geologic processes on animal and human health. Examples will focus primarily on how geologic materials (rocks, minerals, soil, natural
GEOS 3125 Global Climate Change (1 semester hour) This course focuses on the present climate system of Earth, glacial cycles of the past and potential problems such as ozone depletion and greenhouse warming. May not be taken for credit with or after taking GEOS 3350. Not eligible for auditing. The course will last approximately 1 month during a semester. (1-0) Y

GEOS 3126 The Evolution Debate (1 semester hour) The theory of evolution and the origin of life problem. Supporting evidence from the fossil record, molecular biology and DNA. Creationism, intelligent design and pseudoscience. Not eligible for auditing. The course will last approximately 1 month during a semester. (1-0) Y

GEOS 3310 Environmental Geology (3 semester hours) A course examining the interactions of people and our physical environment. Natural hazards, including landslides, flooding, tsunamis, volcanoes, earthquakes, erosion and sea-level change. Air, soil, fresh and ocean water pollution problems and solutions including greenhouse gases, ozone depletion, acid rain, aquifer depletion, toxic wastes and contamination. Energy supplies and the environment, including radioactive waste problems, and human impacts on climate. No prerequisites. (3-0) Y

GEOS 3321 Geology, Resources, and Environment of Latin America (3 semester hours) An overview of the physical environment of Mexico, Central America, and South America. Topics include evolution of Latin American crust and continent; location and formation of major geologic resources and physiographic features; resource exploitation and present environmental problems with an historic perspective. (3-0) R

GEOS 3350 Global Change (3 semester hours) An examination of the Earth as a system of interacting spheres - water, air, land and life - and the energy that drives these systems; global changes that have occurred on Earth in the past (e.g., ice ages, mass extinctions) and are happening now and in the future (e.g., greenhouse warming, ozone depletion); how the presence of life has modified the planet. (3-0) Y

GEOS 3401 Oceanography (4 semester hours) Fundamentals of oceanography, with discussions on the effects of the oceans and people on the Earth's climate and biological communities. Topics include the formation of ocean currents, waves and tides, the greenhouse effect, El Niño, marine pollution, the exploitation of marine resources, wetlands preservation, coral reefs, life in the deep sea, and other marine ecological systems. Laboratory course. Can receive credit for only one of GEOS 3401 or ISNS 3367 The Oceans. (3-3) R

GEOS 3421 Stratigraphy and Sedimentology (4 semester hours) Principles and evolution of modern stratigraphic nomenclature; concepts of space and time in the rock record and methods of stratigraphic correlation; factors controlling stratigraphic architecture of sedimentary basins; integrated stratigraphic techniques. Origin, transportation, and deposition of carbonate and siliciclastic sediments; weathering, textural analysis, and depositional environments. Laboratory course. Field trips. Prerequisites: GEOS 1103, 1104, 1303, 1304, and 2409. (3-3) Y

GEOS 3432 Introduction to Fossils (4 semester hours) Introduction to the study of invertebrate fossils occurring in Cretaceous sedimentary strata in North Texas. "Hands on" approach to the study of invertebrate macrofossils and microfossils includes learning how to (1) collect fossils at selected outcrops in the field; (2) process samples for fossils in the laboratory; (3) illustrate microfossils using the scanning electron microscope; and (4) identify fossils using the available paleontological literature. Both lectures and laboratory exercises will focus on the invertebrate phyla occurring in selected North Texas Cretaceous outcrops. Laboratory and field trip course. Not available to students who have taken, or are taking, GEOS 3430. (3-3) Y

GEOS 3434 Paleobiology (4 semester hours) History of life as documented by the fossil record. Basic concepts of Paleontology and Biostratigraphy followed by a review of major fossil groups and major events in the evolution of life, speciation, mass extinction, evolution of communities and ecosystems through geologic time. Paleontological methods to paleoenvironmental reconstruction. Field trip. Prerequisites: GEOS 1103, 1104, 1303, 1304 and 2409. (3-3) Y

GEOS 3464 Igneous and Metamorphic Petrography (4 semester hours) Introduction to the petrographic microscope and its use for study of igneous and metamorphic minerals and rocks. Identification and classification of volcanic and plutonic igneous rocks and metamorphic rocks and their identification in thin section. Introduction to igneous and metamorphic petrogenesis. Corequisite: GEOS 2406. (3-3) Y

GEOS 3470 Structural Geology (4 semester hours) Modern tectonic concepts, survey of major structural provinces, examination of material behavior, stress-strain concepts, failure criteria, soil mechanics, fault analysis, rheology, fold analysis and applications of structural concepts to neotectonics and environmental problems. Training in graphical techniques, use of stereographic projections, and geological map interpretation. Laboratory course. Field trip. Prerequisites: GEOS 1103, 1104, 1303, 1304, 2409 and 2406. Recommended prerequisites: PHYS 2325 and 2125. (3-3) Y

GEOS 4320 The Physics and Chemistry of Solid Earth (3 semester hours) The study of the structure and evolution of the Earth through petrology, geochemistry and geophysics. Plate tectonics will be emphasized as a framework for crust and mantle...
dynamics. The roles of gravity, thermal processes and the mechanical behavior of rocks are investigated. Tectonic settings of igneous and metamorphic rocks will be explored. Prerequisites: GEOS 1103, 1104, 1303, 1304, 2409, and 3464. Recommended prerequisites: PHYS 2125 and 2325. (3-0) Y

**GEOS 4322 The Earth System** *(3 semester hours)* Planet Earth comprises a system of interacting spheres: atmosphere, hydrosphere, lithosphere and biosphere, all of which have played an important role in Earth processes and Earth history. This course examines these Earth systems and how their interactions over time have effected their evolving compositions, the evolution of life and Earth’s climate. The short-term and long-term parts of the Carbon cycle provide the underlying theme for the study of the Earth System. Prerequisites: GEOS 1103, 1104, 1303, 1304, and 2409. (3-0) Y

**GEOS 4390 Senior Research and Advanced Writing** *(3 semester hours)* For students conducting independent research and scientific writing in Geosciences. Subject and scope to be determined on an individual basis. Satisfies the Advanced Writing Requirement for Geoscience majors. Prerequisites: Consent of instructor and senior in Geosciences. (3-0) S

**GEOS 4399 Senior Honors in Geosciences** *(3 semester hours)* For students conducting independent research for honors theses or projects. Satisfies advanced writing requirement. (3-0) R

**GEOS 4430 Hydrogeology and Aqueous Geochemistry** *(4 semester hours)* An introduction to the principles of physical and chemical hydrogeology. Physical topics include the nature and quantification of the components of the hydrologic cycle, fundamentals of water supply and quality, overview of aquifer testing and environmental assessment. Chemical topics include behavior of low-temperature aqueous solutions, water-rock interaction and applications of chemistry to understand the Earth and its geochemical cycles. Prerequisites: GEOS 1103, 1104, 1303, 1304, and 2409. Recommended prerequisites: CHEM 1311 and 1312. (4-0) Y

**GEOS 4606 Field Geology (Summer Field Camp)** *(6 semester hours)* A four-week summer camp designed to provide both practical geological and geophysical experience. Geology students emphasize mapping in sedimentary, igneous, and metamorphic terrains. Geophysics students utilize seismic, potential field, and electrical methods to analyze a field area. Reports in professional form are required. Prerequisites: GEOS 1103, 1104, 1303, 1304, 2409, 2406, 3421, and 3470. NOTE: A field-trip fee is charged for this course. Students are responsible for all personal expenses related to camp. (6-0) Y

**GEOS 4V08 Special Topics in Geology or Geophysics** *(1-4 semester hours)* Subject matter will vary from semester to semester. Consent of instructor required. May be repeated for credit as topics vary (9 hours maximum). ([1-4]-0) R

**GEOS 4V09 Senior Research in Geology** *(1-6 semester hours)* Topics may vary. May be repeated for credit. No more than 3 hours of senior research may be used to satisfy the upper-division course work requirement in the major unless approved in advance by the undergraduate advisor. Prerequisite: Consent of instructor. ([1-6]-0) S

**GEOS 4V80 Senior Research in Geophysics** *(1-6 semester hours)* Topics may vary. May be repeated for credit. No more than 3 hours of senior research may be used to satisfy the upper-division course work requirement in the major unless approved in advance by the undergraduate advisor. Prerequisite: Consent of instructor. ([1-6]-0) S

### Interdisciplinary Studies Courses Applicable to the B.A. in Geosciences

Students electing the B.A. program in Geosciences may take one of the following university-wide Interdisciplinary Studies courses as a Geosciences elective.

- ISNS 3367 The Oceans
- ISNS 4359 Earthquakes and Volcanoes

### Government and Politics Course Descriptions

**GOVT 2301 Constitutional Foundations and Political Behavior in the U.S. and Texas** *(3 semester hours)* This course examines the evolution and current state of political behavior and public policy making in the U.S. and Texas. Topics discussed will include the constitutions, federalism, intergovernmental relations, voting, elections, political parties, public opinion, and interest groups. (3-0) S

**GOVT 2302 Political Institutions in the U.S. and Texas** *(3 semester hours)* This course explores the primary institutions of U.S. and Texas government. It examines the bureaucracy as well as the executive, legislative, and judicial branches of government at the state and federal level. (3-0) S
**Course Descriptions - Historical Studies**

**HIST 1301 (HIST 1301) U.S. History Survey to Civil War (3 semester hours)** An introduction to the methods of historical inquiry focusing on the study of American history from the beginnings through the American Civil War. (3-0) R

**HIST 1302 (HIST 1302) U.S. History Survey from Civil War (3 semester hours)** An introduction to the methods of historical inquiry focusing on the study of American history from the American Civil War through the present. (3-0) R

**HIST 2301 (HIST 2301) History of Texas (3 semester hours)** The political, social, economic, and cultural development of Texas. (3-0) Y

**HIST 2330 Themes and Ideas in American History (3 semester hours)** An introduction to the methods of historical inquiry through the study of selected main themes in American history. A course designed to offer students an understanding of the historical and cultural context of America in the contemporary world. Topics may vary. (3-0) R

**HIST 2331 Issues in American History (3 semester hours)** Readings, commentary, and discussion aimed at varying aspects of history and culture. Topics may vary. (3-0) T

**HIST 2V71 Independent Study in Historical Studies (1-3 semester hours)** Independent study under a faculty member’s direction. May be repeated for credit (9 hours maximum). Prerequisite: Permission of the instructor. ([1-3]-0) R

**HIST 3301 Historical Inquiry (3 semester hours)** Readings, commentary, and discussion aimed at introducing a variety of texts and sources with an emphasis on the major methods appropriate to their use. This course should be taken prior to completing the first 12 hours of upper-division course work in the program. It is normally offered only during the fall and spring semesters. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) S

**HIST 3304 Conceptions of Human Nature (3 semester hours)** Emphasis on contemporary conceptions of human nature and the human condition, stressing the cultural and historical settings. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

**HIST 3314 Traditional China (3 semester hours)** The history of Chinese civilization from its Neolithic beginnings through the tenth century of the common era, focusing on political, social, economic, intellectual, and cultural developments. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

**HIST 3315 Modern China (3 semester hours)** The history of Chinese civilization from the tenth through twentieth centuries, focusing on political, social, economic, intellectual, and cultural developments. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

**HIST 3317 The Crusades (3 semester hours)** A survey of Medieval European crusading activities in the Iberian Peninsula, the Baltic region, the Near East, and the Balkans. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

**HIST 3318 Medieval Europe (3 semester hours)** The history of Europe from the fall of the Roman Empire to the late medieval period, including feudalism, the investiture controversy, the conflicts of papacy and empire, and the rise of national monarchies. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

**HIST 3319 Early Modern Europe (3 semester hours)** An analysis of the general themes and issues in late medieval and early modern European history from about 1400 to the French Revolution; emphasis on new methods and approaches, especially recent attempts to refine social analysis and to study both popular and elite culture. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

**HIST 3320 Modern Europe (3 semester hours)** A study of selected aspects of political, diplomatic, economic, and social history of Europe from the French Revolution to the Second World War. Geographical emphasis on England, France, and Germany. Topical focus on industrialization, modernization, and democratization in the 19th century, and on the emergence of mass society, war, and totalitarianism in the 20th century. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

**HIST 3324 Women in European Society (3 semester hours)** An historical examination of the varied experiences of European women, focusing on work, family life, political action, sexuality, and cultural expression. May emphasize early modern or modern period. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

**HIST 3328 History and Philosophy of Science and Medicine (3 semester hours)** An exploration of the development of philosophical ideas in science and medicine. Topics may include comparison of Eastern and Western philosophies of natural knowledge and medicine and scientific and medical concepts in philosophical and ethical contexts. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T
HIST 3331 European Social History (3 semester hours) A review of the major problems studied, methods used, and findings
reached by the new social historians of Europe. The principal focus of their work and of this course is on the pre-industrial era.
Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3333 European Social and Political Thought (3 semester hours) A study of such concepts in social and political theory
as authority, justice, equality, law, revolution, natural rights, state, and nation. May include texts by Locke, Burke, Bentham, Mill,
Marx, and Nietzsche. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

HIST 3334 Nineteenth-Century European Culture and Society (3 semester hours) An exploration of the interplay
between social change and cultural developments in various European societies during the 19th century. Prerequisite: HIST 1301,
HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3336 Twentieth-Century European Culture and Society (3 semester hours) An exploration of the interplay between
social change and cultural developments in various European societies during the 20th century. Prerequisite: HIST 1301, HIST 1302,
HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3337 Technology and Western Civilization (3 semester hours) A survey of the role played by technology in shaping
Western culture from antiquity through the industrial revolution. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST
2331, or equivalent. (3-0) T

HIST 3338 Anglo-Saxon Origins (3 semester hours) A study of the formation of England from the Roman occupation to the
Norman Conquest. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3339 Medieval England 1066 to 1485 (3 semester hours) English history from the Norman Conquest to the Tudors.
Topics will include the medieval institutional framework of monarchy, nobility, parliament, church, the law, and the universities.
Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3344 History of Science in Europe (3 semester hours) Surveys the development of the mathematical and natural
sciences in European culture. Subject matter will vary from semester to semester, but topics may include astronomy, physics,
chemistry, biology, medicine, natural history, geology, evolution, and genetics. Time periods may range from human pre-history to
the Scientific Revolution and from the Scientific Revolution to the present. Course content will not overlap with HIST 3337. No
technical background required. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: HIST 1301, HIST 1302,
HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3345 The Making of Russia, 988 to 1796 (3 semester hours) A study of medieval and early modern Russia to the death
of Catherine the Great. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

HIST 3348 The Ancient, Near and Middle East, from Abraham to Muhammad (3 semester hours) A survey from the
Bronze Age, through the ancient empires of Biblical times and the Hellenistic, Parthian, and Sasanid kingdoms, to the lifetime of the
Prophet Muhammad. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3349 Ancient Egypt (3 semester hours) Aspects of the history and culture of ancient Egypt, with emphasis upon the New
Kingdom period. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3351 The Ottoman Empire (3 semester hours) A survey of Ottoman history from 1360 to 1922. Prerequisite: HIST 1301,
HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3353 Ancient and Medieval India (3 semester hours) A survey of the Hindu, Buddhist, and Islamic civilizations of the
Indian subcontinent, with emphasis on the period of Muslim hegemony (11th to 17th centuries). Prerequisite: HIST 1301, HIST
1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

HIST 3354 India from 1526 - 1857 (3 semester hours) The history of the Indian subcontinent under Mughal, Maratha and
British hegemony. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

HIST 3355 Persians, Turks, and Mongols (3 semester hours) Topics in the history of the Near and Middle East, and Central
Asia. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST
2331, or equivalent. (3-0) R

HIST 3357 African History to 1880 (3 semester hours) A survey of African history to 1880, with emphasis on sub-Saharan
Africa. Topics may include Africa before Europe, slave trade, new world blacks in Africa, and colonialism. Prerequisite: HIST 1301,
HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

HIST 3358 Latin American History (3 semester hours) A survey of Latin America from its pre-Columbian past to the present,
with emphasis on the process of change from a traditional to a modern society. Prerequisite: HIST 1301, HIST 1302, HIST 2301,
HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3359 The African Diaspora: Blacks in the Atlantic World (3 semester hours) This course will explore themes linking
people of Africa and of African heritage. Topics may include pre-colonial Africa, slave trade and slavery, Blacks in Europe and the
New World, matronage, slave resistance, and Pan-Africanism. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

HIST 3362 Rise of the Helping Professions in America (3 semester hours) A course on the history of medicine, psychiatry, social work, and education in the United States since the late nineteenth century. Examines the social dynamics and consequences of professional politics, public policies, specialized knowledge, and therapeutic relationships. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

HIST 3364 History of American Religion (3 semester hours) An examination of the development of American religious institutions and their relation to the nation’s social, political, and cultural history. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3366 Themes in the Social History of the United States (3 semester hours) A survey of social history, focusing upon the American experience. The course explores changes in the family, work, sex roles, mobility, migration, urbanization, and industrialization. Topics may vary. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3367 Continental Expansionism in American History (3 semester hours) An exploration of the processes that saw the Anglo-American colonial settlements transform themselves into a vast continental power. The course covers the period from 1607 to 1890. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

HIST 3369 United States Foreign Relations (3 semester hours) A survey of American diplomatic history since the 1890s. The course analyzes the United States’ relations with Africa, Asia, Europe, Latin America, the Middle East, and Soviet Russia. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3370 The American Experience in Vietnam (3 semester hours) An analysis of the political, diplomatic, economic, and cultural impact the Vietnam War had on American society. Students will analyze monographs, memoirs, novels, documentaries, and feature films. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3371 Twentieth-Century American Culture and Society (3 semester hours) An exploration of the interplay between social change and cultural developments during the 20th century. Topics include urban life, mass marketing and media, gender roles, ethnic identity, and the relation between “high” and “low” culture. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

HIST 3374 American Technological Development (3 semester hours) A survey of the role played by technology in shaping American culture from colonial times to the present. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3376 American Intellectual History, Colonial to the Civil War (3 semester hours) A survey of some of the principal developments in American thought from the colonial era to the civil war. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3377 American Intellectual History, Civil War to the Present (3 semester hours) An exploration of the origins of contemporary American intellectual life through the study of changing ideas about society, politics, science, religion, and art from the civil war to the present. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3379 United States Relations with Latin America (3 semester hours) An analysis of the United States’ political, economic, military, and cultural relations with Latin America, with emphasis on the period since the 1890s. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3380 The Nuclear Age in America (3 semester hours) An examination of the historical roots of the modern nuclear age. Topics will include the development of the atomic bomb and the role of nuclear weapons in postwar diplomacy. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3382 The United States Since 1945 (3 semester hours) An analysis of the key political, diplomatic, socioeconomic, technological, and cultural changes that have shaped contemporary U.S. society. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3384 U.S. Women from Settlement to Present (3 semester hours) A survey of the changing social, political, and economic roles of American women. Particular attention will be paid to the diversity of women’s roles, focusing on how women of different races, classes, and sexualities interpreted their “American experience.” Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

HIST 3385 Early African-American History (3 semester hours) A study of themes and issues in the history of African-Americans in the United States. These may include slavery, Blacks in the ante-bellum United States, free Blacks in the ante-bellum era, and Reconstruction. Emphasis will be on African-American perspectives. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

HIST 3389 History of Science in the U.S. (3 semester hours) Surveys the development of the mathematical and natural sciences in American culture. Subject matter will vary from semester to semester, but topics may include astronomy, physics,
chemistry, biology, medicine, natural history, geology, evolution, and genetics. Course content will not overlap with HIST 3337. No technical background required. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

**HIST 3390 Twentieth-Century African-American History (3 semester hours)** A study of themes in the history of African-Americans in the twentieth century. The course will focus on the civil rights movement, though other themes will also be explored. Emphasis will be on African-American perspectives and the ongoing struggle for self-determination by African-Americans. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

**HIST 3394 Native American History from the Pre-Columbian Period through 1795 (3 semester hours)** Examines the arrival of Native Americans in the New World and the cultures that emerged and declined there in the pre-Columbian period. Will also discuss the intellectual framework within which Europeans envisioned Native Americans. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

**HIST 3395 Native American History in the Nineteenth Century (3 semester hours)** Examines the interaction of Native Americans and “whites” during the nineteenth century, primarily in the region west of the Appalachians to the Pacific. Will focus on the cultures of the desert Southwest in the Spanish colonial period. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

**HIST 3396 Native Americans in the Twentieth Century (3 semester hours)** Discusses the allotment or destruction of the reservation system in much of the United States at the turn of the century and will also focus on government attempts to force Native Americans to discard their indigenous identity. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

**HIST 3398 Colonial Latin American History (3 semester hours)** A survey of Latin America from its pre-Columbian past to independence (roughly 1821), the course will emphasize the process of merging pre-Columbian and European cultures throughout the colonial period. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

**HIST 3399 Modern Latin American History (3 semester hours)** A survey of Latin America from independence (roughly 1821) to the present, the course will emphasize the intersection of far-reaching political trends with local cultures in the nineteenth and twentieth centuries. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

**HIST 4344 Topics in European History (3 semester hours)** Subject matter will vary from semester to semester. May be repeated for credit (9 hours maximum). Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

**HIST 4345 Origins of the Jim Crow South (3 semester hours)** An examination of the origins of segregation and disfranchisement in the American South following Reconstruction through World War II. Attention will be paid to both the legal and extralegal edifices upholding white supremacy and the evolution of a racist consumer culture. The course will also explore African-American resistance to Jim Crow. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

**HIST 4346 American Culture 1877 - 1919 (3 semester hours)** A survey of the Gilded Age or Progressive Era, 1877 – 1919. Themes will include expansion of industrial capitalism, the influx of “new immigrants” and patterns of “Americanization,” middle-class social reform, emergence of the U.S. as an imperial power, explosion of nativist and racist sentiments, and the political mobilization of labor. Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

**HIST 4357 Topics in African and African-American History (3 semester hours)** Subject matter will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

**HIST 4358 Topics in Asian History (3 semester hours)** Subject matter will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

**HIST 4359 Topics in Latin American History (3 semester hours)** Subject matter will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

**HIST 4360 Topics in American Women’s History (3 semester hours)** Subject matter will vary from semester to semester and may include Women and the American Frontier, Popular Culture and Mass Media, and American Religious Societies. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

**HIST 4376 Topics in History (3 semester hours)** Subject matter will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

**HIST 4377 Topics in Early American History (3 semester hours)** Focuses on the formative era of the American nation. Social, cultural, political, and economic issues are examined within the context of important transformations over time. Topics will vary
and may include British Colonial America (1609-1763), The Era of the American Revolution, and The Early American Republic (1785-1828). May be repeated for credit as topics vary (9 hours maximum). Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) T

**HIST 4378 Topics in American History** *(3 semester hours)* Subject matter will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

**HIST 4380 Topics in Intellectual History** *(3 semester hours)* Subject matter will vary from semester to semester. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: HIST 1301, HIST 1302, HIST 2301, HIST 2330, HIST 2331, or equivalent. (3-0) R

**HIST 4399 Senior Honors in Historical Studies** *(3 semester hours)* Intended for students conducting independent research for honors theses or projects. Prerequisite: Signature of the instructor on proposed project outline required. (3-0) R

**HIST 4V71 Independent Study in Historical Studies** *(1-3 semester hours)* Independent study under a faculty member's direction. May be repeated for credit (9 hours maximum). Permission of the instructor required. ([1-3]-0) R

**Interdisciplinary Studies Courses Applicable to the Major in Historical Studies**

ISAH 4V88 Special Interdisciplinary Topics in Arts and Humanities, as approved by the instructor and Associate Dean. R

**Literature Course Descriptions**

**LIT 2331 Masterpieces of World Literature** *(3 semester hours)* A study of selected themes in world literature. This course will serve as a prerequisite for all upper-division literature courses. (3-0) Y

**LIT 2332 Studies in Mythology** *(3 semester hours)* An introduction to mythology, with emphasis on the adaptability of mythic themes and characters as reflected in literature from antiquity through the contemporary period. (3-0) T

**LIT 2341 Literary Analysis** *(3 semester hours)* A close reading of fiction, poetry, and drama. Emphasis will be placed on the development of critical skills through the writing of interpretive essays. This course is required of all Literary Studies majors. (3-0) S

**LIT 2V71 Independent Study in Literary Studies** *(1-3 semester hours)* Independent study under a faculty member's direction. May be repeated for credit (9 hours maximum). Prerequisite: Permission of the instructor. ([1-3]-0) R

**LIT 3300 Western Literary Tradition** *(3 semester hours)* Study of major themes of the classical tradition in Western literature and their subsequent transformation. Readings will include works by both classical authors and their literary heirs. This course is required of all Literary Studies majors. Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) S

**LIT 3304 Advanced Composition** *(3 semester hours)* Rhetorical strategies for analytical, descriptive, and research writing, with emphasis on grammar and style. Prerequisite: RHET 1302. (3-0) Y

**LIT 3308 Electronic Expression** *(3 semester hours)* An introduction to forms of expression in and about electronic environments (both textual and visual). Examines topics ranging from writing for the WWW to e-mail, real-time technologies (Lingua MOO), electronic journals, hypertext, and other digital forms of expression. Prerequisite: RHET 1302 or equivalent. (3-0) T

**LIT 3310 Studies in Epic and Romance** *(3 semester hours)* A comparative study of the two related genres, or a study of one of them, with emphasis on their approaches to themes such as heroism, love, or virtue. Readings may be drawn from classical, medieval, and modern literature, and works may include The Iliad, Song of Roland, and Don Quixote. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) T

**LIT 3311 The Literature of Science Fiction and Fantasy** *(3 semester hours)* The tradition of the fantastic narrative from classical through modern literature. Consideration of fantasy and/or science fiction as genres melding entertainment and speculation. Works of fantasy may include The Golden Ass, Dracula, and One Hundred Years of Solitude. Writers of science fiction may include Mary Shelley, Poe, Hawthorne, Wells, Clarke, Heinlein, and LeGuin. May be repeated for credit (6 hours maximum). Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) R

**LIT 3312 Studies in Prose Narrative** *(3 semester hours)* Studies in fiction, biography and autobiography, essays, and travelogues. May examine such topics as the history of the novel, spiritual autobiography, scientific biography, literary movements, and the new journalism. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) Y
LIT 3313 Studies in Dramatic Literature (3 semester hours) Studies in drama as a literary form. May include such topics as Jacobean and Restoration drama, modern or contemporary European drama, and 20th-century American drama. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) T

LIT 3314 Studies in Poetry (3 semester hours) Examines representative selections of poetry with particular reference to techniques of diction, syntax, sound, and organization. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) Y

LIT 3315 Children’s Literature (3 semester hours) An examination of the kinds of literature produced for children and those concerning children as subjects. Works may include fiction, nonfiction, fairy tales, and films from a variety of historical periods as well as works of major authors. May be repeated for credit as topics vary (6 hours maximum). Same as ED 3315. Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) T

LIT 3319 Periods in English Literature (3 semester hours) Examines representative selections of literature written during such periods as the Middle Ages, Renaissance, the 17th century, the 18th century, or the early 19th century, or topics such as the literature of the scientific revolution. May be repeated for credit when literary periods vary (9 hours maximum). Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) Y

LIT 3320 Shakespeare (3 semester hours) A study of selected works of Shakespeare including his sonnets, comedies, poems, tragedies, and historical plays. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) T

LIT 3321 Modern British Literature (3 semester hours) A study of major British authors since the mid-19th century. Authors may include Browning, Tennyson, Conrad, Joyce, Woolf, Yeats, and Eliot. Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) T

LIT 3322 Early American Literature (3 semester hours) A consideration of the beginnings of American literature from Native American myths of origin and writings of Spanish, French and English explorers through Washington Irving. We will read authors such as Cabeza de Vaca, William Bradford, Cotton Mather, Jonathan Edwards, Phillis Wheately, Mary Rowlandson, Franklin, Olaudah Equiano, Paine, Jefferson, Madison, and Charles Brockden Brown. Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) Y

LIT 3323 The American Renaissance 1820-1865 (3 semester hours) A consideration of the development of American literature particularly in New England. We will read authors such as Cooper, Emerson, Fuller, Thoreau, William Apeess, Douglass, Harriet Jacobs, Longfellow, Poe, Hawthorne, Melville, Whitman, and Stowe, and works such as the Cherokee Memorials and the political writings of figures such as Lincoln. Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) T

LIT 3324 American Realism and Naturalism (3 semester hours) Considers the development of late 19th- and early 20th-century writers in a society increasingly urban, cosmopolitan, and pluralistic. Writers may include Twain, Howells, James, Crane, Dreiser, and Anderson. Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) T

LIT 3325 American Modernism (3 semester hours) Surveys the tumultuous swings in American literature about 1910 to 1945. Considers such literary styles as imagism and social realism and samples a diverse array of writers which may include Pound, Fitzgerald, Hemingway, Faulkner, O’Neill, Dos Passos, and Wright. Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) T

LIT 3326 The Literature of the American South (3 semester hours) An examination of the major writers of this region and their sometimes gothic vision of a decaying society. Authors may include Warren, Welty, O’Connor, McCullers, Williams, Faulkner, and Dickey. Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) T

LIT 3327 Mid-Twentieth Century American Literature (3 semester hours) Surveys American literature from about 1945 to about 1980. Samples such writers as the confessional poets, the Beats, Updike, Oates, Pynchon, Bellow, Mailer, and Morrison, and considers such topics as black humor, feminism, the new journalism, and the self-reflexive novel. Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) T

LIT 3328 Ethics in Literature (3 semester hours) Considers the perspective offered by literature on various ethical questions, and the relation between literature and moral philosophy. Topics may include existentialism, the environment, and religion and literature. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) Y

LIT 3329 Ethnic American Literature (3 semester hours) Surveys the literature of American ethnic or minority cultures, considering both their specific cultural features and their relation to the wider American canon. Traditions to be considered may include African-American literature (slave narratives, Harlem Renaissance, contemporary fiction), Chicano literature, or Jewish-American literature. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) T
LIT 3330 Linguistics (3 semester hours) The nature of language; general survey of the contributions of linguistics to the fields of phonetics, phonemics, morphology, lexicology, syntax, and semantics. Other topics of general interest in the field will be covered, such as language change, dialects, writing systems and their history, use and misuse of language, and the language of media, advertising, and politics. Prerequisite: LIT 2331, LIT 2332, LIT 2341 or equivalency, or HUMA 1301. (3-0) Y

LIT 3331 Contemporary American Literature (3 semester hours) Surveys American writers, styles, and movements from the past few decades. Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) R

LIT 3334 Literature of Science (3 semester hours) Explores the interrelations between authors such as Donne, Swift, Mary Shelly, Hardy, and Pynchon, and science, such as astronomy, evolution, medicine, and chaos theory. May be repeated for credit as topics vary (6 hours maximum). (3-0) T

LIT 3342 Literature of the Bible (3 semester hours) A study of the various types of literature found in selected books of the Old and New Testaments. Genres may include epic, tragedy, lyric poetry, satire, biography, and parable. The course may also include works which stem from biblical sources such as Milton's Paradise Lost, Byron's Cain, and MacLeish's J.B. Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) T

LIT 3343 European Romanticism (3 semester hours) Readings in literary theory, fiction, drama, and lyric poetry by the mid-18th-century to mid-19th-century romantic writers of Italy, Germany, France, England, or Spain. Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) T

LIT 3344 European Realism and Naturalism (3 semester hours) A study of the naturalist movement of the late 19th century in Europe. Consideration will be given to the philosophical, social, and scientific backgrounds. Readings will include dramas and novels. Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) T

LIT 3380 Studies in Women's Literature (3 semester hours) An introduction to literature by women. Examines selections of literature written from antiquity through the contemporary period. Considers such literary forms as autobiography, journals, letters, fiction, poetry, and drama. Samples a diverse array of women writers and their relation to the wider Western canon. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) T

LIT 3381 Topics in Western Literature (3 semester hours) Subject matter will vary from semester to semester. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) T

LIT 3382 Topics in Non-Western Literature (3 semester hours) Subject matter will vary from semester to semester. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) R

LIT 3385 Topics in Latin American Literature (3 semester hours) Subject matter will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: HUMA 1301, LIT 2331, LIT 2332, or LIT 2341. (3-0) R

LIT 4329 Major Authors (3 semester hours) Study of one or more major literary figures such as Cervantes, Chaucer, Dante, Milton, Goethe, Blake, Balzac, Borges, Mann, Eliot, Austen, Dostoevsky, Paz, and Tolstoy. May be repeated for credit as subjects vary (9 hours maximum). Prerequisite: Upper-division standing or permission of the instructor. (3-0) T

LIT 4330 Dante (3 semester hours) A close reading of The Divine Comedy (Inferno, Purgatorio, Paradiso) in its historical, philosophical, religious, and poetic contexts, along with related works by Dante and his contemporaries. Prerequisite: Upper-division standing or permission of the instructor. (3-0) T

LIT 4344 The Modern Novel (3 semester hours) A study of several landmark, late 19th- and 20th-century novels, with attention to their literary, intellectual, and historical qualities. Authors may include Borges, Joyce, Proust, Mann, García Márquez, or others. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: Upper-division standing or permission of the instructor. (3-0) T

LIT 4346 Contemporary Literature (3 semester hours) Major trends in contemporary world literature with particular emphasis on the last ten years. Prerequisite: Upper-division standing or permission of the instructor. (3-0) T

LIT 4348 Topics in Literary Studies (3 semester hours) Subject matter will vary from semester to semester. May be repeated for credit (9 hours maximum). Prerequisite: Upper-division standing or permission of the instructor. (3-0) R

LIT 4399 Senior Honors in Literary Studies (3 semester hours) Intended for students conducting independent research for honors theses or projects. Prerequisite: Signature of instructor on the proposed project outline. (3-0) R

LIT 4V71 Independent Study in Literary Studies (1-3 semester hours) Independent study under a faculty member's direction. May be repeated for credit (9 hours maximum). Prerequisite: Permission of the instructor required. (1-3-0) R

Interdisciplinary Studies Course Applicable to the Major in Literary Studies

ISAH 4V88 Special Interdisciplinary Topics in Arts and Humanities, as approved by the instructor and Associate Dean. R
Mathematical Sciences Course Descriptions

**MATH 1306 College Algebra for the Non-Scientist (3 semester hours)** This course is intended for students NOT continuing on to precalculus or calculus. The course is designed to develop both abstract thinking and a practical approach to problem solving. The emphasis is on understanding rather than purely computational skills. Topics include logic, sets, the real numbers, linear equations and their applications, functions, and graphs. Cannot be used to satisfy major requirements for majors in the Schools of Natural Sciences and Mathematics or Management, or degree requirements for the School of Engineering and Computer Science. Credit given for only one of MATH 1306 or 1314. Prerequisite: High School Algebra II. (3-0) Y

**MATH 1314 (MATH 1314) College Algebra (3 semester hours)** Topics chosen from areas such as equations and inequalities, rational expressions, exponents, radicals and logarithms, functions, and graphs. Cannot be used to satisfy major requirements for majors in the Schools of Natural Sciences and Mathematics or Management, or degree requirements for the School of Engineering and Computer Science. Credit given for only one of MATH 1306, or 1314. Prerequisite: High School Algebra II. (3-0) S

**MATH 1316 (MATH 1316) Trigonometry (3 semester hours)** Angular measure, trigonometric functions, their properties; trigonometric identities, equations, and applications; trigonometric form of complex number and related topics. Cannot be used to satisfy major requirements for majors in the School of Natural sciences and Mathematics or Management, or degree requirements for the School of Engineering and Computer Science. Prerequisite: a SAT II Mathematics Level IC Test Score of at least 480 or a grade of at least C- in MATH 1314 or an equivalent course, or concurrent enrollment in MATH 1314. (3-0) S

**MATH 1325 (MATH 1325) Applied Calculus I (3 semester hours)** Functions and graphs, differentiation, maxima and minima, exponential and logarithmic functions, integration, applications of integrals. Cannot be used to satisfy degree requirements or majors in the School of Engineering and Computer Science or major requirements in the School of Natural Sciences and Mathematics. Credit given for only one of MATH 1325 or 2417. Prerequisite: A SAT II Mathematics Level IC Test score of at least 480 or a grade of at least C- in MATH 1314 or an equivalent course. (3-0) S

**MATH 1326 Applied Calculus II (3 semester hours)** Applications of differential equations, functions of several variables, least squares modeling, multiple integrals, infinite series. Cannot be used to satisfy degree requirements for B.S. majors in Schools of Engineering and Computer Science or Natural Sciences and Mathematics. Credit given for only one of MATH 1326 or 2419. Prerequisite: A score of at least 4 on the Advanced Placement Calculus AB exam, a score of at least 3 on the Advanced Placement Calculus BC exam, or a grade of at least a C- in MATH 1325. (3-0) S

**MATH 2013 Differential Calculus Problem Session (0 semester hours)** Problem session required with Differential Calculus, MATH 2413. Corequisite: MATH 2413. (0-2) S

**MATH 2014 Integral Calculus Problem Session (0 semester hours)** Problem session required with Integral Calculus, MATH 2414. Corequisite: MATH 2414. (0-2) S

**MATH 2015 Calculus of Several Variables Problem Session (0 semester hours)** Problem session required with Calculus of Several Variables, MATH 2415. Corequisite: MATH 2415. (0-2) S

**MATH 2017 Calculus I Problem Session (0 semester hours)** Problem session required with Calculus I, MATH 2417. Corequisite: MATH 2417. (0-2) S

**MATH 2018 Linear Algebra Problem Session (0 semester hours)** Problem session required with Linear Algebra, MATH 2418. Corequisite: MATH 2418. (0-2) S

**MATH 2019 Calculus II Problem Session (0 semester hours)** Problem session required with Calculus II, MATH 2419. Corequisite: MATH 2419. (0-2) S

**MATH 2020 Differential Equations Problem Session (0 semester hours)** Problem session required with Differential Equations, MATH 2420. Corequisite: MATH 2420. (0-2) S

**MATH 2051 Multivariable Calculus Problem Session (0 semester hours)** Problem session required with Multivariable Calculus, MATH 2451. Corequisite: MATH 2451. (0-2) S

**MATH 2112 Precalculus Problem Session (1 semester hour)** Problem session for students wanting additional assistance with Precalculus, MATH 2312. Corequisite: MATH 2312. (2-0) S

**MATH 2312 (MATH 2312) Precalculus (3 semester hours)** Real numbers, subsets of real line, absolute value; algebra of functions, domain, range, composition, inverse; elements of analytical geometry including vectors in plane, conics, polar coordinates, translation and rotation of axes and related topics. Prerequisite: A SAT II Mathematics Level IC Test score of at least 550 or a grade of at least a C- in MATH 1314 and MATH 1316 or equivalent courses. (3-0) S

**MATH 2333 Matrices, Vectors, and Their Application (3 semester hours)** Matrices, vectors, determinants, inverses, systems of linear equations, and applications. Cannot be used to satisfy degree requirements for majors in the School of
MATH 2413 (MATH 2413) Differential Calculus (4 semester hours) Course covers topics in differential calculus of functions of one variable; topics include limits, continuity, derivative, chain rule, implicit differentiation, mean value theorem, maxima and minima, curve sketching, derivatives of inverse trigonometric functions, antiderivative, substitution method, and applications. Three lecture hours and two discussion hours (MATH 2017) a week. Credit given for only one of MATH 2333 or MATH 2418. Prerequisite: MATH 1314 or equivalent. (3-0) S

MATH 2414 (MATH 2414) Integral Calculus (4 semester hours) Course covers topics in integral calculus, sequences and series. Topics include the fundamental theorem of calculus, methods of integration, improper integrals, and applications. Sequences, series convergence tests, power series. Introduction to the multivariable calculus, partial differentiation, double and iterated integrals. Three lecture hours and two discussion hours (MATH 2014) a week. Credit given for only one of MATH 1326 or MATH 2414. Prerequisite: A grade of C- or better in either MATH 2413 or MATH 2413 or equivalent. Corequisite: MATH 2014. (4-0) S

MATH 2415 (MATH 2415) Calculus of Several Variables (4 semester hours) The course covers differential and integral calculus of functions of several variables. Topics include vector valued and scalar functions, partial derivatives, directional derivatives, chain rule, Lagrange multipliers, multiple integrals, change of variables in double and triple integrals. Three lecture hours and two discussion hours (MATH 2014) a week. Credit given for only one of MATH 2415 or MATH 2419. Prerequisite: A grade of C- or better in MATH 2414 or equivalent. Corequisite: MATH 2014. (4-0) S

MATH 2417 (MATH 2417) Calculus I (4 semester hours) Functions, limits, continuity, differentiation; integration of function of one variable; logarithmic, exponential, and inverse trigonometric functions; techniques of integration, and applications. Three lecture hours and two discussion hours (MATH 2017) a week. Credit given for only one of MATH 1325 or MATH 2417. Prerequisite: A SAT II Mathematics Level IC Test score of 710, a Level IIC Test score of 630, or a grade of at least C- in MATH 2312 or an equivalent course. Corequisite: MATH 2017. (4-0) S

MATH 2418 (MATH 2418) Linear Algebra (4 semester hours) Systems of linear equations, determinants, vectors and vector spaces, linear transformations, eigenvalues and eigenvectors, quadratic forms. Three lecture hours and two discussion hours (MATH 2018) per week. Credit given for only one of MATH 2333 or 2418. Prerequisite: MATH 2414 or MATH 2419 or consent of instructor. Corequisite: MATH 2018. (4-0) S

MATH 2419 (MATH 2419) Calculus II (4 semester hours) Continuation of MATH 2417. Improper integrals, sequences, infinite series, power series, parametric equations and polar coordinates, vectors, vector-valued functions, functions of several variables, partial derivatives and applications, multiple integration. Three lecture hours and two discussion hours (MATH 2019) a week. Prerequisite: A score of at least 4 on the Advanced Placement Calculus BC exam or a grade of at least C- in MATH 2417. Corequisite: MATH 2019. (4-0) S

MATH 2420 (MATH 2420) Differential Equations with Applications (4 semester hours) Topics covered will be drawn from the following list: First order differential equations, ordinary differential equations, system of linear differential equations, stability, series solutions, special functions, Sturm-Liouville problem, Laplace transforms and linear differential equations and applications in physical sciences and engineering using computers. Three lecture hours and two discussion hours (MATH 2020) per week. Prerequisite: MATH 2419. Corequisite: MATH 2020. (4-0) S

MATH 2451 (MATH 2451) Multivariable Calculus with Applications (4 semester hours) Vectors, matrices, vector functions, partial derivatives, divergence, curl, Lagrangian, multiple integrals, line and surface integrals, Green’s, Stoke’s, and Gauss’s theorems, and applications in physical sciences and engineering. Three lecture hours and two discussion hours (MATH 2051) per week. Prerequisite: MATH 2415 or MATH 2419. Corequisite: MATH 2051. (4-0) S

MATH 2V90 (MATH 2V90) Topics in Mathematics (1-6 semester hours) Special topics in mathematics outside the normal course of offerings. May be repeated for credit as topics vary (9 hours maximum). Consent of instructor required. (1-6-0) S

MATH 3301 (MATH 3301) Mathematics for Elementary and Middle School Teachers (3 semester hours) This course is intended to develop future teacher’s depth of mathematical understanding by examining concepts in school mathematics from an advanced perspective. Topics include: number systems; arithmetic algorithms, prime factorization and other properties of the integers; proportional reasoning involving fractions and decimals; counting methods; and basic ideas of geometry and measurement. Problem solving is stressed. Cannot be used to satisfy: [1] undergraduate mathematics core requirement, [2] degree requirements by students in Mathematical Sciences, [3] the advanced electives, or [4] certification requirements in 8-12 mathematics. Prerequisite: MATH 1306 or MATH 1314 or equivalent course. (3-0) S

MATH 3303 (MATH 3303) Introduction to Mathematical Modeling (3 semester hours) An introduction to construction, use, and analysis of empirical and analytical mathematical models. Emphasis on using appropriate technology with tools such as curve fitting,
MATH 3305 Foundations of Measurement and Informal Geometry (3 semester hours) An analysis, from an advanced perspective, of the basic concepts and methods of geometry and measurement. Topics include visualization, geometric figures and their properties; transformations and symmetry; congruence and similarity; coordinate systems; measurement (especially length, area, and volume); and geometry as an axiomatic system. Emphasis on problem solving and logical reasoning. Cannot be used to satisfy: [1] undergraduate mathematics core requirement, [2] degree requirements by students in Mathematical Sciences, [3] the advanced electives, or [4] certification requirements in 8-12 mathematics. Prerequisite: MATH 2312, MATH 3301 or equivalent course. (3-0) Y

MATH 3307 Mathematical Problem Solving for Teachers (3 semester hours) Development of the ability to solve mathematical problems and communicate their solutions through the study of strategies and heuristics. Practice in solving problems involving ideas from number theory, algebra, combinatorics and probability, etc. Communicating mathematics, logical reasoning, and connections between mathematical topics will be emphasized. Cannot be used to satisfy degree requirements by students in Mathematical Sciences or the advanced electives. Prerequisites: MATH 2312 and MATH 3305 or MATH 3321. (3-0) Y

MATH 3310 Theoretical Concepts of Calculus (3 semester hours) Mathematical theory of calculus. Limits, types of problems involving ideas from number theory, algebra, combinatorics and probability, etc. Communicating mathematics, logical reasoning, and connections between mathematical topics will be emphasized. Cannot be used to satisfy degree requirements by students in Mathematical Sciences or the advanced electives. Prerequisites: MATH 2312 and MATH 3305 or MATH 3321. (3-0) Y

MATH 3311 Abstract Algebra I (3 semester hours) Groups, rings, fields, vector spaces modules, linear transformations, and Galois theory. Prerequisite: MATH 2419. (3-0) Y

MATH 3312 Abstract Algebra II (3 semester hours) Continuation of MATH 3311. Prerequisite: MATH 3311. (3-0) Y

MATH 3321 Geometry (3 semester hours) Elements of Euclidean, non-Euclidean, and projective geometry. Topics covered will be drawn from the following list: triangles and their distinguishing points, Euler line, nine point circle, extremum problems, circles and spheres, inversions, the circles of Apollonius, projective geometry, axioms of the projective plane, Desargues’s theorem, conics, elementary facts of the non-Euclidean geometries. Prerequisite: MATH 2419. (3-0) Y

MATH 3379 Complex Variables (3 semester hours) Geometry and algebra of complex numbers, functions of a complex variable, power series, differentiation, and Riemann integration. Prerequisites: MATH 2451 and 3310. (3-0) Y

MATH 4301 Mathematical Analysis I (3 semester hours) Sets, real number system, metric spaces, real functions of several variables. Riemann-Stieltjes integration and other selected topics. Prerequisites: MATH 2451 and 3310. (3-0) Y

MATH 4302 Mathematical Analysis II (3 semester hours) Continuation of Math 4301. Prerequisite: MATH 4301. (3-0) Y

MATH 4332 Scientific Math Computing (3 semester hours) Topics covered include introduction to Unix shells, basic and advanced use of Matlab for mathematical and scientific problem solving. Course is conducted in a computer classroom and assignments include applications in numerical and statistical analysis, image processing, and signal processing. Prerequisites: MATH 2418 and MATH 2419 or equivalent. (3-0) S

MATH 4334 Numerical Analysis (3 semester hours) Solution of linear equations, roots of polynomial equations, interpolation and approximation, numerical differentiation and integration, solution of ordinary differential equations; computer arithmetic and error analysis. cannot get credit for both CS/MATH 4334 and CE/EE/TE 4334. Prerequisites: MATH 2418, 2451, and CS 1337 or equivalent knowledge of a high-level programming language. (Same as CS 4334) (3-0) Y

MATH 4341 Topology (3 semester hours) Elements of general topology, topological spaces, continuous functions, connectedness, compactness, completeness, separation axioms, and metric spaces. Prerequisites: MATH 2451 and 3310. (3-0) Y

MATH 4355 Methods of Applied Mathematics (3 semester hours) Topics include some frequently used tools in applied mathematics: Laplace and Fourier transforms, special functions, systems, signals, and their applications in physical sciences and engineering. Prerequisites: MATH 2418 and 2420. (3-0) T

MATH 4362 Partial Differential Equations (3 semester hours) This course presents a survey of classical and numerical methods for the solution of linear and nonlinear boundary value problems governed by partial differential equations. Modeling and application-related issues are included throughout. Prerequisites: MATH 2420, 2451, and knowledge of a high-level programming language. (3-0) T

MATH 4390 Senior Research and Advanced Writing (3 semester hours) For students conducting independent research and scientific writing. Individual instruction course designed to develop skills for research and clear, precise and accurate scientific writing. Topics will vary from section to section depending upon the interests of the student, but will be selected from a specific area of mathematics. Subject and scope to be determined on an individual basis. Satisfies the Advanced Writing Requirement. Prerequisite: Senior in Mathematics. (3-0) S

MATH 4398 Senior Honors in Mathematical Sciences (3 semester hours) For students conducting independent research for honors theses or projects. (3-0) S
MATH 4V03 Independent Study in Mathematics (1-6 semester hours) Independent study under a faculty member's direction. Student must obtain approval from participating math sciences faculty member and the undergraduate advisor. Can satisfy Communication elective (3 hours) if it has a major writing/report component. May be repeated for credit (9 hours maximum). Prerequisite: Consent of instructor. ([1-6]-0) S

MATH 4V91 Undergraduate Topics in Mathematics (1-9 semester hours) Subject matter will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: Consent of instructor. ([1-9]-0) S

Mechanical Engineering Course Descriptions

MECH 1308 Introduction to Mechanical Engineering (3 semester hours) Project-based instruction. The purpose of this course is to give students a general understanding of the broad range of mechanical engineering applications. Course exercises include team-oriented project activities, lectures by various external mechanical engineering experts, and introductory materials associated with the discipline. (1-2) Y

MECH 1V95 Topics in Mechanical Engineering (1-9 semester hours) Subject matter will vary from semester to semester. May be repeated as topics vary (9 hours maximum). ([1-9]-0) R

MECH 2120 Mechanical Measurements Laboratory (1 semester hour) Laboratory course. The laboratory introduces mechanical measurement techniques and processes. Introduction to basic instrumentation used in mechanical engineering, including calibration, use, precision, and accuracy. Consideration of errors, precision, and accuracy in experimental measurements. Co-requisite: MECH 2320. (0-1) Y

MECH 2300 Linear Algebra for Engineers (3 semester hours) Matrices, vectors, linear systems of equations, Gauss-Jordan elimination, LU factorization and rank. Determinants and solutions of linear systems. Vector spaces, linear dependence/independence, basis and change of basis. Linear transformations and matrix representation; similarity. Scalar products, orthogonality, Gram-Schmidt process and QR factorization. Eigenvalues, eigenvectors, and diagonalization; singular-value decomposition. Problem solving using MATLAB. Students cannot get credit for both CE/EE/MECH 2300 and MATH 2418. Co-requisite: MATH 2419. (Same as CE/EE 2300) (3-0) S

MECH 2310 Static Equilibrium and Rigid Body Dynamics (3 semester hours) Lecture course. Course material includes static equilibrium of particles, trusses and machines. Friction equivalent systems, particle dynamics in one, two and three dimensions, work, energy, angular momentum and moment of inertia, and dynamics of rigid bodies. Prerequisite: MATH 2419. (3-0) Y

MECH 2320 Strength of Materials (3 semester hours) Lecture course. Course material includes introduction to stress and deformation analysis of basic structural elements subjected to axial, torsional, bending, and pressure loads. Prerequisites: MECH 2300 and MECH 2310. (3-0) Y

MECH 2V95 Topics in Mechanical Engineering (1-9 semester hours) Subject matter will vary from semester to semester. May be repeated as topics vary (9 hours maximum). ([1-9]-0) R

MECH 3101 Materials Laboratory (1 semester hour) Laboratory course associated with MECH 3301. Laboratory demonstrating the basic properties of materials using experimental studies. This laboratory concentrates on the relationships of microscopic and macroscopic behavior of materials using experimental techniques to illustrate behavior. Co-requisite: MECH 3301. (0-1) Y

MECH 3105 Computer Aided Design Laboratory (1 semester hour) Project-based course associated with MECH 3305. Design projects involving CAD tools constitute a major portion of the course. Co-requisite: MECH 3305. (0-1) Y

MECH 3115 Fluid Mechanics Laboratory (1 semester hour) Project-based course associated with MECH 3315. Wind tunnel calibration and survey, wind tunnel turbulence tests, boundary layer on a flat plate, static stability, design and conduct experiments. Co-requisite: MECH 3315. (0-1) Y

MECH 3120 Heat Transfer Laboratory (1 semester hour) Project-based course associated with MECH 3320. Course emphasis is on experiments related to thermodynamics, heat transfer, and fluid mechanics. Proper experimental methods, data and uncertainty analysis related to thermal and fluids measurements are discussed. Co-requisite: MECH 3320. (0-1) Y

MECH 3150 Mechanical Engineering Laboratory (1 semester hour) Project-based course associated with MECH 3350. Laboratory course focused on students performing a team design project of a complex Mechanical system. Complete analysis of the devices will be documented. Co-requisite: MECH 3350. (0-1) Y

MECH 3300 Advanced Engineering Mathematics (3 semester hours) Study of advanced mathematics topics needed in the study of engineering. Topics include vector differential calculus, vector integral calculus, integral theorems, complex variables,
MECH 3310 Thermodynamics (3 semester hours) Lecture course. Course material includes determination of stresses, deflections, and stability of deformable bodies, including matrix structural analysis. Prerequisite: MECH 2300. (3-0) S

MECH 3301 Mechanics of Metals (3 semester hours) Lecture course. Course material includes determination of stresses, deflections, and stability of deformable bodies, including matrix structural analysis. Prerequisite: MECH 2320. Pre-requisite: MECH 3300. (3-0) Y

MECH 3302 Intermediate Dynamics (3 semester hours) Lecture course. A continuation of the study of kinematics and kinetics of particles and rigid bodies, with applications to mechanical systems of current interest to engineers. Topics include three-dimensional kinematics of a rigid body, planar kinetics of a rigid body, three-dimensional kinetics of a rigid body, equations of motion. Pre- or Co-requisite: MECH 2320. Pre-requisite: MECH 3300. (3-0) Y

MECH 3305 Computer Aided Design (3 semester hours) Lecture course. Course material includes an introduction to Computer-Aided Mechanical Design (CAMD) tools (hardware/software) and their applications to mechanical systems design. Pre- or Co-requisite: MECH 3300. (3-0) Y

MECH 3310 Thermodynamics (3 semester hours) Lecture course. This course focuses on availability and reversible work, machine, and cycle processes; real gas behavior; non-reactive gas mixtures; reactive mixtures; and thermodynamics of compressible fluid flow. Prerequisite: MECH 3300. (3-0) Y

MECH 3315 Fluid Mechanics (3 semester hours) Lecture course. Course material includes an introduction to the concepts and applications of fluid mechanics and dimensional analysis with an emphasis on fluid behavior, internal and external flows, analysis of engineering applications of incompressible pipe systems, and external aerodynamics, ideal fluid flow including potential flow theory, and computer solutions in ideal fluid flow. Prerequisites: MECH 2310 and MECH 3300. (3-0) Y

MECH 3320 Heat Transfer (3 semester hours) Lecture course. This course focuses on the treatment of conductive, convective, and radiative energy transfer using control volume and differential analysis and prediction of transport properties. Prerequisite: MECH 3315. (3-0) Y

MECH 3341 Probability Theory and Statistics (3 semester hours) Axioms of probability, conditional probability, Bayes theorem, random variables, probability density function (pdf), cumulative density function, expected value, functions of random variable, joint, conditional and marginal pdf’s for two random variables, moments, introduction to random processes, density estimation, regression analysis and hypothesis testing. Students cannot get credit for both CS/SE 3341 and CE/EE/TE 3341. Prerequisite: MATH 2419. Recommended co-requisite: MATH 2420. (Same as CE/EE/TE 3341) (3-0) S

MECH 3340 Probability Theory and Statistics (3 semester hours) Axioms of probability, conditional probability, Bayes theorem, random variables, probability density function (pdf), cumulative density function, expected value, functions of random variable, joint, conditional and marginal pdf’s for two random variables, moments, introduction to random processes, density estimation, regression analysis and hypothesis testing. Students cannot get credit for both CS/SE 3341 and CE/EE/TE 3341. Prerequisite: MATH 2419. Recommended co-requisite: MATH 2420. (Same as CE/EE/TE 3341) (3-0) S

MECH 3350 Mechanical Component and System Design (3 semester hours) Lecture course. This course focuses on failure analysis and design of machine components and integrated systems, synthesize mechanisms for specified performance, analyze given mechanisms for position, velocity, acceleration and static and dynamic forces. Perform a team design project. Prerequisites: MECH 3301, MECH 3302, and MECH 3315. (3-0) Y

MECH 3V95 Topics in Mechanical Engineering (1-9 semester hours) Subject matter will vary from semester to semester. May be repeated as topics vary (9 hours maximum). (1-9-0) R

MECH 4110 Systems Laboratory (1 semester hour) Project-based course associated with MECH 4310. Laboratory course focused on design, implementation, and use of portable digital data acquisition systems for characterization and control of dynamic mechanical systems. Emphasis on durable systems developed for harsh environments. Experiments design to test and evaluate control processes of dynamic mechanical systems. Co-requisite: MECH 4310. (0-1) Y


MECH 4330 Intermediate Fluid Mechanics (3 semester hours) Lecture course. This course covers ideal fluid flow, including potential flow theory, computer solutions in ideal fluid flow, viscous flow and boundary layer theory and introduction to turbulence. Prerequisite: MECH 3310. (3-0) Y

MECH 4340 Mechanical Vibrations (3 semester hours) Lecture course. This course covers harmonic and periodic motion including both damped and undamped free and forced vibration, single- and multi-degree-of-freedom systems and matrix techniques suitable for digital computer solution. Prerequisite: MECH 3302. (3-0) Y

MECH 4350 Applied Heat Transfer (3 semester hours) Lecture course. This course extends topics beyond those found in the first course in heat transfer (MECH 3320), as well as introducing multi-mode heat transfer analyses. More complex heat transfer problems, both transient and steady state, with an awareness of the interactions associated with integrating various modes of energy transfer are introduced. Examples of current heat transfer applications are incorporated into the course material. Prerequisite: MECH 3320. (3-0) Y
MECH 4360 *Introduction to Nanostructured Materials* (3 semester hours) Lecture course. The emphasis in this course is to introduce students to the science of the building blocks of nanostructured materials, their chemical and structural characterization, material behavior, and the technological implications of these materials. Special attention is devoted to presenting new developments in this field and future perspectives. Prerequisite: MECH 3320. (3-0) Y

MECH 4370 *Introduction to MEMS* (3 semester hours) Lecture course. This course will target an audience of motivated senior-level undergraduates, with the goal of providing an introduction to M/NEMS fabrication techniques, selected device applications, and the design tradeoffs in developing systems. Prerequisite: MECH 3350. (3-0) Y

MECH 4381 *Senior Design Project 1* (3 semester hours) Project-based capstone course. Student groups design, build, and test a device that solves an open-ended mechanical engineering design problem. MECH 4381 focuses on background research and engineering analysis, MECH 4382 on prototype construction and testing. As a designated MECH Writing-Intensive Course, MECH 4381-4382 also focuses on the refinement of students' engineering communications skills and their use of writing as a critical-thinking and learning tool. Prerequisites: MECH 3320, 3341, 3350 and 4310; ECS 3390. (3-0) Y

MECH 4382 *Senior Design Project 2* (3 semester hours) Project-based capstone course. Student groups design, build, and test a device that solves an open-ended mechanical engineering design problem. MECH 4381 focuses on background research and engineering analysis, MECH 4382 on prototype construction and testing. As a designated MECH Writing-Intensive Course, MECH 4381-4382 also focuses on the refinement of students' engineering communications skills and their use of writing as a critical-thinking and learning tool. Prerequisite: MECH 4381. (3-0) Y

MECH 4V95 *Topics in Mechanical Engineering* (1-9 semester hours) Subject matter will vary from semester to semester. May be repeated as topics vary (9 hours maximum). ([1-9]-0) R

**Music Course Descriptions**

**MUSI 1306 (MUSI 1306) Understanding Music** (3 semester hours) An introduction to the elements and basic forms of music, with particular emphasis on the composer's creative process and the listener's participation. Methods of analytical and aesthetic appreciation will be applied to musical examples, with corollaries in literature, history, theatre, and the visual arts. (3-0) Y

**MUSI 1313 Fundamentals of Music** (3 semester hours) Introduction to the elements and organization of music, including analysis and discussion of representative works. Focuses on developing practical musical skills through oral, aural, and written experiences with rhythms, melodies, intervals, scales, chords, and music notation. (3-0) Y

**MUSI 2315 Guitar I** (3 semester hours) An introductory class in the basic skills in classical and finger-style guitar for both beginning and intermediate students. Course includes hand positions and posture, accurate tuning, music reading, and melodic, harmonic, and rhythmic exercises. May be repeated for credit (9 hours maximum). (0-3) S

**MUSI 2317 Piano I** (3 semester hours) Basic piano technique and interpretive skills, suitable for both beginning pianists and students with some keyboard experience but little formal training. May be repeated for credit (9 hours maximum). (0-3) S

**MUSI 2319 Digital Music I** (3 semester hours) An introduction to the concepts and techniques of digital music production. Topics may include midi sequencing, digital audio, and basic editing techniques. May be repeated for credit (9 hours maximum). (0-3) Y

**MUSI 2322 Music in Western Civilization** (3 semester hours) A broad review of Western music from the Middle Ages to the twenty-first century, with emphasis on the Middle Ages, Renaissance, Baroque, Classical, Romantic, and Modern styles. Develops listening skills and an understanding of diverse genres and places works in their social and cultural contexts. (3-0) T

**MUSI 2324 Instrumental Ensemble I** (3 semester hours) May include orchestra, strings, winds, chamber music, etc. May be repeated for credit (9 hours maximum). (0-3) S

**MUSI 2325 Vocal Instruction I** (3 semester hours) A course in basic singing techniques and interpretive skills, suitable for both beginning singers and for students with singing experience but little formal training. May be repeated for credit (9 hours maximum). (0-3) S

**MUSI 2326 Jazz Ensemble I** (3 semester hours) A performing ensemble of approximately 24 players. Repertoire is selected from a broad range of jazz music. May be repeated for credit (9 hours maximum). (0-3) Y

**MUSI 2327 Community Chorale** (3 semester hours) A community chorus with repertoire selected from a broad range of choral literature, including sacred and secular music from the Renaissance to the contemporary period. Topics may vary. May be repeated for credit (9 hours maximum). (0-3) Y

**MUSI 2328 Music Theory I** (3 semester hours) Studies in music theory and analysis, keyboard harmony, ear training and sight-singing. (0-3) Y
MUSI 2V71 **Independent Study in Music** *(1-3 semester hours)* Independent study under a faculty member's direction. Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). *(1-3)-0* R

MUSI 3322 **Music in Historical Context** *(3 semester hours)* Studies in the development of music from ancient Greece to the 21st century. Topics may include specific periods or musical styles. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: ARTS 1301, MUSI 1306, MUSI 2322, or permission of instructor. *(3-0)* T

MUSI 3342 **Topics in Music** *(3 semester hours)* Topics may include theory and composition, a specific composer, or a genre such as guitar literature, “new music” or jazz. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: Three hours of lower-division music coursework or permission of instructor. *(3-0)* Y

MUSI 3380 **Guitar II** *(3 semester hours)* Course builds musicianship and classical guitar technique through coaching and ensemble performance. Repertoire includes music from the 16th century to present-day composers. May be repeated for credit (9 hours maximum). Prerequisite: Permission of instructor. *(0-3)* Y

MUSI 3381 **Instrumental Ensemble II** *(3 semester hours)* May include orchestra, winds, strings, chamber music, etc. May be repeated for credit (9 hours maximum). Prerequisite: Permission of the instructor. *(0-3)* S

MUSI 3382 **Vocal Instruction II** *(3 semester hours)* Intermediate singing techniques and interpretive skills, focusing on fundamentals of correct breathing, tone production, style, interpretation, and diction. May be repeated for credit (9 hours maximum). Prerequisite: Permission of the instructor. *(0-3)* S

MUSI 3385 **Chamber Singers** *(3 semester hours)* Chamber Singers is a performing ensemble of approximately 24 singers performing on a regular basis at the University and in the community. The repertoire for the ensemble will be selected from a broad range of chamber vocal literature, sacred and secular music from the Renaissance to the contemporary period. May be repeated for credit (9 hours maximum). Prerequisite: Permission of the instructor. *(0-3)* S

MUSI 3386 **Jazz Ensemble II** *(3 semester hours)* A performing ensemble of approximately 24 players. Repertoire is selected from a broad range of jazz music. May be repeated for credit (9 hours maximum). Prerequisite: Permission of the instructor. *(0-3)* Y

MUSI 3387 **Jazz Improvisation and Keyboard Harmony** *(3 semester hours)* Teaches techniques of jazz improvisation and keyboard harmony for instrumentalists and vocalists. Prerequisite: MUSI 2328 or permission of instructor. *(0-3)* Y

MUSI 3388 **Piano II** *(3 semester hours)* Intermediate piano technique and interpretive skills for students continuing from Piano I or with prior training. The course focuses on repertoire building and performance of the works of major composers. May be repeated for credit (9 hours maximum). Prerequisite: Permission of the instructor. *(0-3)* T

MUSI 3389 **Digital Music II** *(3 semester hours)* A project-based course incorporating advanced editing and signal processing techniques. May be repeated for credit (9 hours maximum). Prerequisite: MUSI 2319 or permission of the instructor. *(0-3)* T

MUSI 4312 **Chamber Music Ensemble** *(3 semester hours)* Provides performance opportunities for undergraduate instrumentalists and singers. Repertoire will range from duos and trios to larger ensembles in musical styles from medieval to contemporary. May be repeated for credit (9 hours maximum). Prerequisite: Permission of the instructor. *(0-3)* S

MUSI 4345 **Music Performance III** *(3 semester hours)* Technique and repertoire of a particular musical medium. May include piano, voice, guitar, strings, winds, or other instruments. May be repeated for credit (9 hours maximum). Prerequisite: Permission of the instructor. *(0-3)* T

MUSI 4346 **Instrumental Ensemble III** *(3 semester hours)* May include Chamber Music Ensemble, Orchestra, Guitar Ensemble, or Jazz Ensemble. May be repeated for credit (9 hours maximum). Prerequisite: Permission of the instructor. *(0-3)* T

MUSI 4347 **Vocal Ensemble III** *(3 semester hours)* May include Chamber Singers, Jazz Singers, or Vocal Ensemble. May be repeated for credit (9 hours maximum). Prerequisite: Permission of the instructor. *(0-3)* T

MUSI 4348 **Creating Music** *(3 semester hours)* Theory, principles, and practice of music composition. Includes study of notation, musical forms and styles, and the development and performance of new music. May be repeated for credit (9 hours maximum). Prerequisite: MUSI 2328 or permission of instructor. *(0-3)* T

MUSI 4V61 **Individual Instruction in Vocal Performance** *(1-3 semester hours)* Intermediate and advanced-level instruction in singing techniques and interpretive skills. Students must also be enrolled in a 3000 or 4000-level performance ensemble. May be repeated for credit (9 hours maximum). Prerequisite: Permission of the instructor. *(1-3)-0* R

MUSI 4V71 **Independent Study in Music** *(1-3 semester hours)* Independent study under a faculty member's direction. Signature of instructor on proposed project outline required. May be repeated for credit (9 hours maximum). Prerequisite: Upper-division standing, and completion of all lower-division requirements in AP, and permission of the instructor. *(1-3)-0* R
Natural Sciences Core Curriculum Courses

NATS 1111 From the Cosmos to Earth Laboratory (1 semester hour) A laboratory to accompany NATS 1311. Corequisite: NATS 1311. (0-3) Y

NATS 1311 From the Cosmos to Earth (3 semester hours) A multidisciplinary study of nature expressly designed for those who have chosen not to major in the natural sciences or engineering. Early models of the solar system and the transformation to current models are examined, as are order in the universe, the nature of matter and the planets, sun, and life cycle of stars. The course will be enhanced by frequent demonstrations of the principles underlying the origin and evolution of the universe. Corequisite: NATS 1111. (3-0) Y

NATS 2332 Age of Dinosaurs (3 semester hours) Introductory survey of the origin, evolution, anatomy, physiology, life-styles, population dynamics, and extinction of dinosaurs and marine and flying reptiles, as well as Mesozoic climates and basic Earth history of the "Age of Dinosaurs." One Saturday trip to Dinosaur Valley State Park. $50 field trip fee required. No prerequisites. (3-0) Y

NATS 2V10 Special Topics in Natural Sciences (1-6 semester hours) Subject matter will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: Consent of instructor. ([1-6]-0) S

NATS 3330 The Basis of Evolution (3 semester hours) Wide-ranging discussions of the unifying theory of the origin and modification through time of all organisms. Pertinent history, the fossil record, evolution as concerns the human experience, processes and mechanisms and a look at the future are major topics. This course is specifically designed for non-majors and may not be used for credit by Natural Science and Mathematics students. (3-0) S

NATS 3331 The Clash of Cosmologies (3 semester hours) Science and Revelation in the Nineteenth Century. A study of the 19th-century rise of scientific inquiry into the origins of life, and the reaction and response to its discoveries by the Victorian culture that both maintained Biblical authority and celebrated man's achievements. A study abroad component supplements this course. (3-0) Y

NATS 4310 Advanced Writing in the Natural Sciences and Mathematics (3 semester hours) A writing-intensive course on questions or problems in natural sciences and mathematics; satisfies the advanced writing requirement for graduation. (3-0) S

NATS 4V90 Special Topics in Natural Sciences (1-6 semester hours) Subject matter will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: consent of instructor. ([1-6]-0) S

Neuroscience Course Descriptions

NSC 3344 Anatomy and Physiology of Speech and Hearing (3 semester hours) Study of anatomic and physiologic mechanisms underlying speech respiration; phonation; articulation. Overview of the peripheral auditory system. (Same as SPAU 3344) (3-0) Y

NSC 3345 Neural Basis of Communication (3 semester hours) Organization and function of cortical and subcortical structures that underlie speech, language and hearing. Special consideration of structures and pathways typically affected in neurogenic disorders of communication. (Same as SPAU 3345) (3-0) Y

NSC 3361 Behavioral Neuroscience (3 semester hours) Introductory course that explores the nature of the brain processes underlying behavior, including consideration of basic neurophysiology and the physiology of sensation, learning, and emotion. (3-0) S

NSC 4066 Neuroanatomy Workshop (0 semester hours) Problem solving and discussion related to the subject matter in NSC 4366. Corequisite: concurrent enrollment in NSC 4366. (1-0) Y

NSC 4352 Cellular Neuroscience (3 semester hours) The cell biology and cellular physiology of the neuron. Growth and maintenance of dendrites, axons and synapses, and the underlying processes of macromolecule synthesis, packaging, and transport are the central biological issues. Electrical signaling, ion channel functions, and synaptic transmission are covered. Prerequisite: NSC 3361. (3-0) Y

NSC 4353 Neuroscience Laboratory Methods (3 semester hours) This laboratory course provides hands-on experience with the use of electrophysiological techniques for the analysis of living neural preparations. (This course fulfills the advanced writing requirement for Neuroscience majors and 3 hours of the Communication component of the Core Curriculum). Prerequisite: NSC 3361 and either NSC 4352 or NSC 4356. (0-3) S
NSC 4354 Integrative Neuroscience (3 semester hours) Examines the collective behavior of neuronal systems with respect to sensory processing, motor control, and the plasticity regulating more advanced behavioral, motivational, and cognitive functions. Pre- or corequisite: NSC 3361. (3-0) Y

NSC 4355 Advanced Neuroscience Laboratory (3 semester hours) This laboratory course exposes students to a structured research project, with topics selected in consultation with the instructor. It requires students to develop a rationale for experiments and to interpret their results. Each student writes a publication-style paper with reference to the scientific literature. Prerequisite: NSC 4353. (0-3) R

NSC 4356 Neurophysiology (3 semester hours) This course focuses on the elements of neural functions ranging from the kinetics of channels in excitable membranes to the collective behavior of real neural networks. Prerequisite: NSC 4352. (3-0) Y

NSC 4357 Neurobiology of Learning (3 semester hours) Current research and theory on modifications in the nervous system that may underlie memory. Includes an overview of synaptic physiology and behavioral pharmacology, and development of the concept of neural plasticity from foundations ranging from cell biology through behavioral analyses. Includes discussion of clinical symptoms including amnesia and dementias. Prerequisite: NSC 4354. (3-0) T

NSC 4358 Neurobiology of Sensation and Perception (3 semester hours) An emphasis on similarities and differences between systems that play a critical role in information processing for the execution of coordinated movement, navigation, and interaction with the environment and others. Prerequisite: NSC 4354. (3-0) Y

NSC 4359 Cognitive Neuroscience (3 semester hours) Examines how modern cognitive neuroscientists explore the neural underpinnings of perception, memory, attention, language and emotion. Investigates how the brain-bases of these functions are uncovered by ingenious observations of clinical populations (including brain-damaged and schizophrenic patients), animal and human electrophysiological techniques, and powerful new functional neuroimaging tools. Prerequisite: PSY/CGS 3361 or CGS 2301. (Same as CGS 4359 and PSY 4359) (3-0) Y

NSC 4360 Neuroimmunology (3 semester hours) A detailed examination of central nervous system regulation of the endocrine system, primarily via the hypothalamic-pituitary-adrenal axis. Examines feedback effects of hormonal actions on neuronal function. Prerequisite: NSC 4366. (3-0) T

NSC 4361 Neuroendocrinology (3 semester hours) Studies of the effects of the brain and the mind on the immune system, and subsequent effects on health and disease. Immune effects on neural and endocrine actions are also considered. Prerequisites: BIO 2312 and NSC 3361. (3-0) T

NSC 4362 Computational Neuroscience (3 semester hours) Students learn to make and run simulations of neurons and small networks of neurons. Exploration and testing of different network topologies encouraged. Prerequisite: NSC 4356. (Same as CGS 4368) (3-0) T

NSC 4363 Neuroanatomy (3 semester hours) Introduction to the anatomical organization and basic functional principles of the major sensory, motor, associative, and modulatory systems of the human brain. Students learn to identify visually specific structures on slides, magnetic resonance images (MRI), and dissected brain specimens in relation to neural pathways and system interconnections. This course provides a basis for a general understanding of the human brain and its functions in relation to disease and behavior. Prerequisite: NSC 3361 or BIO 2311. Corequisite: NSC 4066. (3-0) Y

NSC 4364 Neurobiology of Sensation and Perception (3 semester hours) An emphasis on similarities and differences between systems that play a critical role in information processing for the execution of coordinated movement, navigation, and interaction with the environment and others. Prerequisite: NSC 4354. (3-0) Y

NSC 4365 Neurobiology of Learning (3 semester hours) Current research and theory on modifications in the nervous system that may underlie memory. Includes an overview of synaptic physiology and behavioral pharmacology, and development of the concept of neural plasticity from foundations ranging from cell biology through behavioral analyses. Includes discussion of clinical symptoms including amnesia and dementias. Prerequisite: NSC 4354. (3-0) T

NSC 4366 Neuroimmunology (3 semester hours) A detailed examination of central nervous system regulation of the endocrine system, primarily via the hypothalamic-pituitary-adrenal axis. Examines feedback effects of hormonal actions on neuronal function. Prerequisite: NSC 4366. (3-0) T

NSC 4367 Developmental Neurobiology (3 semester hours) Examines the processes guiding the proliferation, differentiation and migration of neurons as they form transient or long-lasting connections and circuits. Prerequisite: NSC 4352 or NSC 4354. (3-0) Y

NSC 4368 Computational Neuroscience (3 semester hours) Students learn to make and run simulations of neurons and small networks of neurons. Exploration and testing of different network topologies encouraged. Prerequisite: NSC 4356. (Same as CGS 4368) (3-0) T

NSC 4369 Neuroendocrinology (3 semester hours) Studies of the effects of the brain and the mind on the immune system, and subsequent effects on health and disease. Immune effects on neural and endocrine actions are also considered. Prerequisites: BIO 2312 and NSC 3361. (3-0) T

NSC 4370 Sensory Neurophysiology (3 semester hours) An emphasis on similarities and differences between the physiology of our five “classical” senses, non-classical (non-lemniscal) ascending pathways, the role of descending pathways, and the anatomical and physiological basis for pain. Prerequisite: NSC 4354. (3-0) T

NSC 4371 Neural Plasticity in Neuropathologies (3 semester hours) The symptoms and signs of multiple disorders are caused by reorganization or plasticity of the central nervous system. This course examines the neural plasticity underlying the pathophysiology of disorders such as chronic pain, tinnitus, balance disorders, spasticity, etc., a “dark side” of plasticity not widely recognized. Prerequisite: NSC 4352. (3-0) T

NSC 4372 Honors Seminar (3 semester hours) A course for students who conduct undergraduate thesis research in the School of Behavioral and Brain Sciences. The seminar explores the different types of thesis research, current research opportunities in the school, and appropriate techniques for writing the thesis proposal and final thesis report. Broader issues of professional development are also explored. Permission of Associate Dean required. This course is required for all students seeking School
Honors (minimum GPA of 3.4 & 30 hours at UTD). Recommended, but not required, for students seeking University magna or summa cum laude honors. (Same as CGS 4375, CLDP 4375, PSY 4375, and SPAU 4375) (3-0) R

**NSC 4376 Stress and the Nervous System** (3 semester hours) Studies of the basic effects of stressors (specific and nonspecific) on bodily systems, with respect to health and disease and maintenance of homeostatic equilibria. Neural, endocrine, and immune interactions will be assessed. Prerequisite: NSC 4354. (3-0) T

**Special Topics**
Topics under the following course number vary from semester to semester. The class schedule for the current semester will list the special topic that will be offered.

**NSC 4V90 Special Topics in Neuroscience** (1-6 semester hours) May be repeated for credit as topics vary (9 hours maximum). (Same as CGS 4V90, CLDP 4V90, PSY 4V90, and SPAU 4V90) ([1-6]-0) R

**Independent Study**
The following independent study courses are advanced individualized projects to be arranged with a supervising professor. Open only to qualified students by consent of instructor. Students must contact professor and design a contract for study prior to enrollment. Permission forms are available in the Office of the Associate Dean. Students may enroll in no more than a total of 6 semester credit hours of the independent study courses during one semester, and may take a maximum of 20 percent of the total hours of course work undertaken at U.T. Dallas or 12 semester hours, whichever is smaller.

**NSC 4394 Internship in Neuroscience** (3 semester hours) Students earn course credit for field experience in an applied setting. Requires working at least 8 hours per week at an approved community agency or business of the student’s choice. Students keep daily job diaries, attend one class meeting per month, and write brief papers relevant to their experiences. Open to all students who have reached junior or senior standing (more than 53 hours). Apply for placements in the Dean’s office. Must be taken on Credit/No Credit basis. (Same as CGS 4394, CLDP 4394, PSY 4394 and SPAU 4396) (3-0) S

**NSC 4397 Honors Thesis** (3 semester hours) An independent study in which the student writes an honors thesis under faculty supervision. Permission of instructor and Associate Dean required. (3-0) S

**NSC 4V96 Teaching Internship** (1-3 semester hours) Students work individually with faculty member in preparing and presenting course materials and tutoring students. Must have completed the relevant course with a grade of at least B. Permission of the instructor and Associate Dean required. Taken on a Credit/No Credit basis. May be repeated for credit (6 hours maximum). ([1-3]-0) S

**NSC 4V98 Directed Research** (1-3 semester hours) Student assists faculty with research projects or conducts a research project under weekly faculty supervision. Taken on a Credit/No Credit basis. May be repeated for credit (9 hours maximum). ([1-3]-0) S

**NSC 4V99 Individual Study** (1-3 semester hours) Student studies advanced topics under weekly faculty supervision. Permission of the instructor and Associate Dean required. Taken on Credit/No Credit basis. May be repeated for credit (6 hours maximum). ([1-3]-0) S

**Philosophy Course Descriptions**

**PHIL 1301 (PHIL 1301) Introduction to Philosophy** (3 semester hours) An introduction to philosophy through the consideration of topics such as human nature, good and evil, and the mind/body problem. (3-0) Y

**PHIL 2316 (PHIL 2316) History of Philosophy I** (3 semester hours) Intensive study of texts significant in the history of philosophy from antiquity through the Renaissance. (3-0) T

**PHIL 2317 (PHIL 2317) History of Philosophy II** (3 semester hours) Intensive study of texts significant in the history of philosophy from the early modern period to the present. (3-0) T

**PHIL 2V71 Independent Study in Philosophy** (1-3 semester hours) Independent study under a faculty member’s direction. May be repeated for credit (9 hours maximum). Prerequisite: Permission of the instructor. ([1-3]-0) R
PHIL 3304 Conceptions of Human Nature (3 semester hours) Emphasis on contemporary conceptions of human nature and the human condition, stressing the cultural and historical settings. Prerequisite: PHIL 1301, PHIL 2316, PHIL 2317 or equivalent. (3-0) R

PHIL 3373 Philosophy of Mind (3 semester hours) An examination of the historical roots of the mind/body problem and efforts to resolve it. May also examine the nature of consciousness, the problem of other minds, the nature of sensation and personhood, and the emotions. Prerequisite: PHIL 1301, PHIL 2316, PHIL 2317 or equivalent. (3-0) R

PHIL 3375 Ethics in Contemporary America (3 semester hours) An examination of various ethical problems which have been a part of 20th-century American consciousness, against the backdrop of social and political events. Issues may include abortion, capital punishment, sexual morality, world hunger, and war. Prerequisite: PHIL 1301, PHIL 2316, PHIL 2317 or equivalent. (3-0) T

PHIL 3392 Reason, Reasoning, and Logic (3 semester hours) An examination of the nature of rationality and a discussion of some of the various types of reasoning systems. Techniques designed to improve skills in presenting and evaluating arguments. Prerequisite: PHIL 1301, PHIL 2316, PHIL 2317 or equivalent. (3-0) R

PHIL 4305 Ideas and Their History (3 semester hours) A study of the origin, continuity, and diffusion of major philosophical ideas, viewed primarily in historical context. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: Upper-division standing or permission of the instructor. (3-0) T

PHIL 4308 Theories of Knowledge (3 semester hours) A study of central topics in the theory of knowledge, including skepticism and the limits of knowledge, relativism and objectivity, and the role of perception, memory, introspection and reason as sources of knowledge. Prerequisite: PHIL 1301, PHIL 2316, PHIL 2317 or permission of the instructor. (3-0) R

PHIL 4380 Topics in Philosophy (3 semester hours) Subject matter will vary from semester to semester. May be repeated for credit as topics vary (6 hours maximum). Prerequisite: Upper-division standing or permission of the instructor. (3-0) R

PHIL 4V71 Independent Study in Philosophy (1-3 semester hours) Independent study under a faculty member’s direction. May be repeated for credit (9 hours maximum). Prerequisite: Permission of the instructor. ((1-3)-0) R

Physics Course Descriptions

PHYS 1001 College Physics I Recitation (0 semester hours) Problem-solving recitation section for College Physics I. Corequisite: PHYS 1301. (0-0) Y

PHYS 1002 College Physics I Recitation (0 semester hours) Problem-solving recitation section for College Physics II. Corequisite: PHYS 1302. (0-0) Y

PHYS 1100 The Fun of Physics (1 semester hour) An introductory course in physics in the modern world. Focuses on the work of a physicist. What does a physicist do? What are some of the exciting topics on which physicists are working today? The faculty discusses their favorite concepts and the opportunities for student participation in research. Must be taken on a Credit/No Credit basis only. (1-0) Y

PHYS 1101 College Physics Laboratory I (1 semester hour) A laboratory course to accompany PHYS 1301. Cannot be used to satisfy degree requirements for majors in the School of Engineering and Computer Science. Corequisite: PHYS 1301 or PHYS 3341. (0-3) Y

PHYS 1102 College Physics Laboratory II (1 semester hour) A laboratory course to accompany PHYS 1302. Cannot be used to satisfy degree requirements for majors in the School of Engineering and Computer Science. Corequisite: PHYS 1302 or PHYS 3342. (0-3) Y

PHYS 1301 College Physics I (3 semester hours) Algebra and trigonometry based basic physics. Topics include mechanics, heat and thermodynamics. Cannot be used to satisfy degree requirements for majors in the School of Engineering and Computer Science. Check with your program advisor. Prerequisite: MATH 1314. Corequisites: PHYS 1001 and PHYS 1101. (3-0) Y

PHYS 1302 College Physics II (3 semester hours) Continuation of PHYS 1301. Topics include electricity and magnetism and optics. Cannot be used to satisfy degree requirements for majors in the School of Engineering and Computer Science. Check with your program advisor. Prerequisite: PHYS 1301. Corequisites: PHYS 1002 and PHYS 1102. (3-0) Y

PHYS 2025 Mechanics Recitation (0 semester hours) Problem-solving recitation section for Mechanics. Corequisites: PHYS 2125 and PHYS 2325. (1-0) Y

PHYS 2026 Electromagnetism and Waves Recitation (0 semester hours) Problem-solving recitation section for Electromagnetism and Waves. Corequisites: PHYS 2126 and PHYS 2326. (1-0) Y
PHYS 2027 Engineering Electromagnetics Recitation (0 semester hours) Problem-solving recitation section for Engineering Electromagnetics. Corequisites: PHYS 2127 and PHYS 2327. (1-0) Y

PHYS 2125 Physics Laboratory I (1 semester hour) Laboratory course to accompany PHYS 2325. Personal computer-based data presentation and curve fitting. Basic measurement concepts such as experimental uncertainty, mean, standard deviation, standard error, and error propagation will be covered. Corequisite: PHYS 2325 or PHYS 2421. (0-3) Y

PHYS 2126 Physics Laboratory II (1 semester hour) Laboratory course to accompany PHYS 2326. Experiments investigate Coulomb's Law, electric fields, Ohm's and Kirchoff's laws, RC circuits, magnetic forces between conductors, motors and transformers. Corequisite: PHYS 2326 or PHYS 2422. (0-3) Y

PHYS 2127 Engineering Electromagnetics Laboratory I (1 semester hour) Laboratory exercises designed to provide hands-on experiences that will reinforce the concepts presented in PHYS 2327. Weekly laboratory assignments will also provide an introduction to the correct use of basic laboratory test and measurement equipment, including power supplied, multimeters, oscilloscopes, and signal generators. Corequisite: PHYS 2327. (0-3) Y

PHYS 2303 Contemporary Physics (3 semester hours) Topics include the fundamentals of geometric optics, interference, diffraction, special relativity and structure of the atom, nuclear physics, radioactivity and elementary particles. (3-0) Y

PHYS 2325 (PHYS 2325) Mechanics (3 semester hours) Calculus based. Basic physics including a study of space and time, kinematics, forces, energy and momentum, conservation laws, rotational motion, torques, and harmonic oscillation. Two lectures per week. Prerequisite: MATH 2417. Corequisites: PHYS 2025 and PHYS 2125. (3-0) Y

PHYS 2326 (PHYS 2326) Electromagnetism and Waves (3 semester hours) Continuation of PHYS 2325. Topics include electrostatics and electromagnetics, electric field and potential, electric currents, magnetic fields, laws of Coulomb, Ampere, and Faraday, Maxwell's theory of wave propagation. Two lectures per week. Prerequisites: PHYS 2325 and MATH 2419. Corequisites: PHYS 2026 and PHYS 2126. (3-0) Y

PHYS 2327 Engineering Electromagnetics (3 semester hours) An introduction to electromagnetism with emphasis on engineering applications, including the relationship between Maxwell's equations and the rules of AC and DC planar circuit analysis. Application of Maxwell's equations to passive circuit elements, RL, RC, and RLC circuits, and propagation effects relevant to signal transmission in free space and on integrated circuit boards. Prerequisites: PHYS 2325 and MATH 2419. Corequisites: PHYS 2027 and PHYS 2127. (3-0) Y

PHYS 2421 Honors Physics I – Mechanics and Heat (4 semester hours) Calculus-based physics. This class is a more rigorous version of PHYS 2325 with additional topics in thermal physics. Derivations are more general and rely more heavily on calculus and the use of vectors. More challenging problems and applications. Two lectures plus a required recitation session per week. Prerequisite: MATH 2417. Corequisite: PHYS 2127. (4-0) Y

PHYS 2422 Honors Physics II – Electromagnetism and Waves (4 semester hours) Calculus-based basic physics. This class is a more rigorous version of PHYS 2326. Derivations are more general and rely more heavily on multi-dimensional calculus concepts such as divergence, gradient, curl, and the theorems of Green, Stokes and Gauss. More challenging problems and applications. Two lectures plus a required recitation session per week. Prerequisites: PHYS 2325 or PHYS 2421, and MATH 2419. Corequisites: MATH 2451 and PHYS 2126 or PHYS 2127. (4-0) Y

PHYS 3041 Physics for Bio Science I Recitation (0 semester hours) Problem-solving recitation section for Physics for Bio Science I. Corequisites: PHYS 1101 and PHYS 3341. (1-0) Y

PHYS 3042 Physics for Bio Science II Recitation (0 semester hours) Problem-solving recitation section for Physics for Bio Science II. Corequisites: PHYS 1102 and PHYS 3342. (1-0) Y

PHYS 3180 Observational Astronomy Laboratory I (1 semester hour) Use of modern telescopes, understanding how telescopes work and the types of telescopes available today. Introduction to the night sky, and planetary, stellar, and extragalactic objects visible in portable instruments. Locating objects using star charts and with “got-to” controllers. Classes will meet both indoors and outside, weather permitting. Prerequisite: PHYS 2303, PHYS 2325, or PHYS 2421. (0-3) Y

PHYS 3125 Electronics Laboratory (1 semester hour) Laboratory course to accompany PHYS 3325. Students will use common laboratory equipment to diagnose and troubleshoot breadboard circuits they build in lab. The lab exercises are closely tied to the topics covered weekly in PHYS 3325 lectures. The final lab of the semester is a design lab in which students design, build and test a sequential logic circuit to solve a specific problem. Corequisite: PHYS 3325. (0-3) Y

PHYS 3181 Observational Astronomy Laboratory II (1 semester hour) Use of cameras, digital and traditional with telescopes for lunar, planetary and deep sky astrophotography. Computer processing of images. Mounting systems, field derotation, and optical detectors. Classes will meet both indoors and outside, weather permitting. Prerequisite: PHYS 3180. (0-3) Y

PHYS 3311 Theoretical Physics (3 semester hours) Review of: Complex numbers, vector spaces, linear operators, and vector integral systems. Study of Fourier series; product solutions of PDEs; and special functions. Co-requisite: Differential Equations
PHYS 3312 Classical Mechanics (3 semester hours) Newton's laws; collisions; two body problems and trajectories; Lagrangian formulation; rotational dynamics and the inertia tensor; rotating coordinate systems; gravitation. Prerequisite: PHYS 3311 or equivalent. (3-0) Y

PHYS 3324 Scientific Computing (3 semester hours) Introduction to modern programming languages like C++ and Fortran. Applications of programming for scientific analysis, manipulation, and graphical display. (3-0) R

PHYS 3325 Electronics (3 semester hours) Topics include direct and alternating current circuits, diodes and transistors, feedback, passive and active filters, simple amplifiers, and combinatorial and sequential digital electronics. Prerequisite: PHYS 2326, PHYS 2327 or PHYS 2422. Corequisite: PHYS 3125. (3-0) Y

PHYS 3330 Numerical Methods in Physics and Computational Techniques (3 semester hours) The course covers concepts and computational techniques in numerical methods for solving physics problems. Topics typically include probability, statistics, data analysis, fits, numerical solutions, and interpretation of the experimental data. Prerequisite: CS 1337 or equivalent experience with a computer programming language. (3-0) Y

PHYS 3341 Physics for Bio Science I (3 semester hours) Calculus based. Basic physics for pre-health science students. Topics include mechanics, heat and thermodynamics. Some discussions on biological applications. Two lectures per week. Prerequisite: MATH 2417. Corequisites: PHYS 1101 (College Physics Laboratory I) and PHYS 3041 (Physics for Bioscience I Recitation). (3-0) Y

PHYS 3342 Physics for Bio Science II (3 semester hours) Continuation of PHYS 3341. Topics include electricity, magnetism and optics. Some discussions on biological applications. Two lectures per week. Prerequisites: PHYS 3341 and MATH 2419. Corequisites: PHYS 1102 (College Physics Laboratory II) and PHYS 3042 (Physics for Bio Science II). (3-0) Y

PHYS 3352 Modern Physics I (3 semester hours) Wave-particle duality, atomic structure, one- and three-dimensional elementary quantum mechanics, and energy levels of single- and multi-electron atoms. Fine structure splitting and momentum coupling. Prerequisite PHYS 2303; co-requisite: PHYS 3311. (3-0) Y

PHYS 3380 Astronomy (3 semester hours) An essentially descriptive course outlining the current views of the universe and the sources of data supporting those views. The solar system and its origin, stars, galaxies, pulsars, quasars, black holes, nebulae and the evolution of the universe. Opportunity to use a U.T. Dallas telescope is provided. Prerequisite: PHYS 2326 or PHYS 2327 or PHYS 2422. (3-0) Y

PHYS 3416 Electricity and Magnetism (4 semester hours) Coulomb's and Gauss's laws; potentials, methods for solving electric field distributions near conductors; potentials due to clusters of charges; polarization of dielectric materials; electric displacement. Magnetic fields in a vacuum and in matter; time varying electric and magnetic fields; Maxwell's equations; electromagnetic waves. Prerequisite: PHYS 3311 or equivalent. (4-0) Y

PHYS 4301 Quantum Mechanics I (3 semester hours) Fundamental concepts: the Stern Gerlach experiment; the Dirac formalism; kets; bras and operators; base kets and matrix representations. Measurements, observables and the uncertainty relations. Position, momentum, and translation. Wave functions in position and momentum space. Time evolution and Schrödinger's equation, Heisenberg picture. Orbital angular momentum, spin, and angular momentum addition. Applications include simple harmonic oscillator and the Hydrogen atom. Prerequisites: PHYS 3311, PHYS 3352 and either MATH 2333 or MATH 2418. (3-0) Y

PHYS 4302 Quantum Mechanics II (3 semester hours) Fermions and bosons, perturbation theory, WKB approximation, scattering. Prerequisite: PHYS 4301. (3-0) T

PHYS 4311 Thermodynamics and Statistical Mechanics (3 semester hours) Study of the elements of thermodynamics, kinetic theory, and statistical mechanics; the concepts of temperature, entropy, phase transitions, transport phenomena, partition functions, statistical ensembles; the Maxwell-Boltzmann, Fermi-Dirac, and Bose-Einstein distributions; and the equipartition theorem. Applications of the theories will be considered. Prerequisites: PHYS 2325, PHYS 2326, and PHYS 3311. (3-0) Y

PHYS 4324 Computer Interfacing and Data Acquisition (3 semester hours) Hardware and software techniques to utilize computers in data acquisition and control of physics experiments. Operation of digital input and output devices, analog to digital converters, digital to analog converters, and intercomputer communication. Hands-on operation of several devices. (3-0) T

PHYS 4328 Optics (3 semester hours) Topics include electromagnetic waves and radiation, the interaction of light and matter, geometric optics, polarization, interference, and diffraction. Prerequisite: PHYS 3416. (3-0) Y

PHYS 4352 Modern Physics II (3 semester hours) Topics in this advanced continuation of PHYS 3352 include the application of quantum mechanics and statistical physics to laser, molecular, and solid state devices; Nuclear structure (models and forces) and subnuclear particles will also be discussed. Prerequisite: PHYS 3352. (3-0) Y
PHYS 4371 Solid State Physics (3 semester hours) This course provides a basic but detailed picture of important concepts in solid state physics. Material covered includes crystal structure, x-ray crystallography, reciprocal space, lattice vibrations, thermal properties of solids, free electron gas, Bloch functions, metals, insulators and semiconductors. The course concludes with a description of basic semiconductor devices. Prerequisites: PHYS 3352 and PHYS 3416. (3-0) Y

PHYS 4373 Physical Measurements Laboratory (3 semester hours) Thermodynamics and physical properties of matter, vacuum technology, gas phase kinetics, spectroscopy, basic operations in electronics, literature skills, and use of computers. Prerequisites: PHYS 3352 and 3416. (0-6) Y

PHYS 4381 Space Science (3 semester hours) A survey of the structure and dynamics of the atmospheres of planets, including ionospheres and magnetospheres, as influenced by the sun’s radiation and the solar wind. Topics include aurora and airglow, photochemistry and atmospheric electricity. Prerequisite: PHYS 2322, or PHYS 2326, or equivalent. (3-0) T

PHYS 4383 Plasma Physics (3 semester hours) Plasmas are the 4th state of matter, in which some or all of the neutral particles in a gas are ionized. A working knowledge of plasma physics is important in nuclear physics, semiconductor processing, space science, astronomy, and many other areas. This course will examine the fundamental treatment of plasmas as embodied in the fluid equations, magneto-hydrodynamics, and simple kinetic theory. Specific topics include plasma waves and instabilities, diffusion, guiding center motion and drifts, currents in plasmas, and particle collisions. Prerequisite: PHYS 3311. Prerequisite or corequisite: PHYS 3416. (3-0) R

PHYS 4390 Senior Research and Advanced Writing (3 semester hours) Individual instruction course designed to develop skills for research and clear, precise and accurate scientific writing. Research may be either scientific experimentation or critical analysis of scientific literature. Topics will vary from section to section depending upon the interests of the student, but will be selected from a specific area of physics. Satisfies the Advanced writing requirement. (3-0) S

PHYS 4399 Senior Honors Research in Physics (3 semester hours) Individual instruction course designed to develop skills for research and clear, precise and accurate scientific writing. Research may be either scientific experimentation or critical analysis of scientific literature. Topics will vary from section to section depending on the interests of the student, but will be selected from a specific area of physics. Satisfies the Advanced writing requirement. Topics may vary. (3-0) S

PHYS 4V07 Senior Projects Laboratory (1 - 6 semester hours) Intended as an introduction to research, this course involves independent reading and/or laboratory work on advanced topics or experiments. May be repeated for credit (9 hours maximum). Prerequisite: consent of instructor. (0-[1-6]) R

PHYS 4V10 Special Topics in Physics (1-9 semester hours) Subject matter will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: consent of instructor. ([1-9] -0) S

Political Science Course Descriptions

PSCI 3301 Political Theory (3 semester hours) An examination of perennial issues in political thought through a study of the work and research methods of selected theorists in the history of political thought. (3-0) Y

PSCI 3303 Civil Liberties (3 semester hours) An examination of the development of constitutional law in the area of civil liberties. (3-0) T

PSCI 3306 Political Economy (3 semester hours) Investigates various conceptual perspectives for understanding the relationship between economic processes and political institutions. Focuses particular attention on the normative and policy debates separating conservative, liberal, and radical schools of thought. (3-0) R

PSCI 3310 Public Administration (3 semester hours) Overview of management responsibilities, functions, and activities in government agencies within the framework of political values and organizational dynamics. (Same as PA 3310) (3-0) Y

PSCI 3322 Constitutional Law (3 semester hours) Students will examine the methods used in legal research, the evolution of the Constitution of the United States, and the role of the Supreme Court of the United States in the development of the American constitutional system. (3-0) Y

PSCI 3323 American Federalism (3 semester hours) An examination of how local, state, and national governments share power in such important areas as education, environmental regulation, public finance, welfare, housing and community development, and criminal justice. There will also be discussions of recent innovations, such as judicial supervision and deregulation. (3-0) R

PSCI 3325 American Public Policy (3 semester hours) This course examines the making of public policy in the U.S. political system. Students will examine the various public policy models and case studies related to specific policy areas. All students are required to write a policy related term paper to fulfill the University's writing requirement. Prerequisite: GOVT 2301 and GOVT 2302 or permission of instructor. (3-0) Y
PSCI 3326 Politics and Business (3 semester hours) An investigation of the role played by business in American politics. Particular attention will be focused on the regulatory process and the changing relationship between business and government in it. (3-0) T

PSCI 3327 American Foreign Policy (3 semester hours) Examines the way in which the policy-making process structures the premises, concepts, and objectives of U.S. policy and the U.S. role in international politics. (3-0) R

PSCI 3328 International Relations (3 semester hours) This course explores the power relationships among national actors and organizations. Topics may include origins of the state system, international security, globalization, north-south relations, ecological security, and the implications of world demographic patterns. (3-0) R

PSCI 3333 Political Behavior (3 semester hours) This course addresses the questions of why some people vote but others do not, how individuals make political choices, and how people participate in other ways. It examines the behavioral approach to the study of government and politics, the major theories of political behavior, and the effects of long-term changes, socialization processes, media use and political attitudes and institutions. (3-0) Y

PSCI 3340 Film and Politics (3 semester hours) This course examines the role of one form of media in shaping political discourse. It examines the role of documentaries, drama, and comedy in shaping, exposing, and reflecting public political sentiments of the day. (3-0) R

PSCI 3350 Comparative Politics (3 semester hours) An analysis of political life in different cultural and national settings. Considers different theoretical approaches to comparative politics, and differences and similarities in types of political culture, political participation, political institutions, and citizen well-being and government effectiveness. (3-0) R

PSCI 3351 Comparative Courts and Law (3 semester hours) Examines the roles of constitutions and law across a wide range of countries. Relatedly considers theoretical approaches and research methodologies used to advance understanding of the courts. (3-0) R

PSCI 3353 Law and Gender (3 semester hours) Examines how laws and legal institutions reflect and reproduce cultural notions of gender. Focuses on how legal equality and sex discrimination have been defined and challenged. Topics include rape law, reproductive issues, marriage and divorce, pornography, workplace regulations, and, generally, how gender and race ideologies interact in legal decision making. (Same as SOC 3353) (3-0) R

PSCI 3354 Gender, Society, and Politics (3 semester hours) Addresses the influence of gender on the distribution of public goods and the way gender, interacting with race and class, shapes social, political, and economic institutions. Introduces students to traditional notions of rights and citizenship as conceptual underpinnings for contemporary political and legal debates (on welfare, reproductive rights, childcare, job segregation, women in the military, prostitution). (Same as GST 3303 and SOC 3354) (3-0) Y

PSCI 3362 American Political Institutions (3 semester hours) This course examines the constitutional foundations and historical development of the congress, the presidency, the executive, and the courts. Attention will be paid to both the interactions of these institutions, research methodologies employed in examining these institutions, and the internal workings of each. Prerequisite: GOVT 2301 and GOVT 2302 or permission of instructor. (3-0) Y

PSCI 3364 Campaigns and Elections (3 semester hours) An examination of the electoral process and the changing role that political parties have played in the development of American political institutions and public policy. (3-0) T

PSCI 4305 Political Research (3 semester hours) Introduces students to how to develop and answer interesting questions about citizenship, governance, and politics. Covers basic research skills and their application to real world political questions and problems. Course is recommended for students pursuing independent study or theses in the political and social sciences, or those considering law and professional programs. Prerequisite: SOCS 3305 or equivalent. (3-0) Y

PSCI 4311 The Political Economy of Modern Texas (3 semester hours) This course offers an advanced analysis of the political and economic trends that shape modern Texas. Students will explore the roots of the current political and economic framework in addition to the contemporary challenges that the state confronts by examining academic works and interacting with state policymakers. Consent of instructor required. (3-0) Y

PSCI 4321 Media and Politics (3 semester hours) This course will give students a background in the development of the press as a political institution and the logistics of news-making and coverage. We will examine the theoretical and actual roles played by the press in public affairs to develop understanding of current and persistent problems of press performance such as bias, independence, manipulation by government and special interests, and the quest for profits at the expense of public service. (3-0) R

PSCI 4326 Political Parties and Interest Groups (3 semester hours) Studies the development and organization of political parties and interest groups, and their activities in campaigns and policy making and implementation, in the United States. Political and legal issues in the regulation of nominating processes, campaign finance, lobbying, redistricting, and related areas are addressed. (3-0) R
PSCI 4329 Global Politics (3 semester hours) This course will introduce students to the study of global politics. It will explore the teachings from comparative politics and international relations in examining changing global relationships and power structures, and the research methodologies used in this analysis. (3-0) Y

PSCI 4330 The Bible and Politics (3 semester hours) An investigation of the Bible as a political text. Includes discussion of the political context and themes of the Bible and analysis of political theories based upon biblical perspectives. (3-0) R

PSCI 4331 Mexican Politics (3 semester hours) This course explores the changing face of the Mexican political economy. Topics will include the evolution and decline of the PRI, the revolt in Chiapas, NAFTA, Mexico's role in Latin America, and the changing nature of its relations with the U.S. (3-0) T

PSCI 4332 Latin American Politics (3 semester hours) After a brief review of the region’s history from conquest and independence up to the 20th century, the course will include discussions of current issues confronting the region. These issues may include U.S./Latin American relations including NAFTA, demographic changes, religion, guerrilla groups, revolution, and the transition from authoritarianism to democracy. (3-0) T

PSCI 4341 Politics of the Judicial Process (3 semester hours) The study of judicial decision making, the political impact of court decisions, and the role of lawyers and judges at the local, regional, and national levels. (3-0) T

PSCI 4342 Legislative Decision Making (3 semester hours) This course examines the politics of the Texas Legislature in detail. It is offered only during legislative sessions and uses the session as a backdrop to examine policy making and politics in this branch of state government. Consent of instructor required. (3-0) T

PSCI 4343 Congress and Public Policy (3 semester hours) This course explores the history and development of both the place of Congress in the Constitutional order and the internal structures and behaviors of the legislative process. Topics include congressional-presidential relations, elections, representation, committees, parties and leadership, collective action and coalition building, and Congress's capacity to deliberate and make public policy in “the public interest.” (3-0) T

PSCI 4344 Race and Redistricting (3 semester hours) Examines the politics and process of redrawing congressional and state legislative district lines, notably how this process is influenced by politics as well as by important principles and laws. Reviews the history of redistricting in the U.S. House of Representatives and considers recent redistricting and the role of race in this process. (3-0) R

PSCI 4345 Negotiation and Conflict Resolution (3 semester hours) This course will introduce students to the theory and practice of negotiations in the public sector. Students analyze the parties, issues, and strategies in negotiations and will take part in many negotiation simulations to develop their skills in issues identification and problem resolution. The course will begin with the study of two-party negotiations and progress to multi-party, multi-issue negotiations. (Same as PA 4345) (3-0) T

PSCI 4346 War and Peace (3 semester hours) This course examines the processes of conflict resolution and peacemaking in the modern world by analyzing emerging trends and patterns in global conflict, and the prospects for peace in an evolving world order. The course will consider the roles of the individual; social movements and institutions; culture and values; and state, regional and international institutions in making war and peace. In addition, it will examine the causes and prevention of war, ethnic conflict, terrorism, and security issues. (3-0) T

PSCI 4347 The War on Drugs (3 semester hours) This course examines the war on drugs within the context of democratic stability. Alternative state responses to the drug trade will be covered, with attention to the consequences of those policies on democratic stability. Substantially, we will deal with these questions within the context of individual democracies in Latin America and in other regions. (3-0) T

PSCI 4348 Terrorism (3 semester hours) This course, focusing on cases of domestic terrorism, examines terrorism within the context of democratic stability. Alternative state responses to these crises will also be covered, with attention to the consequences of those policies on democratic stability. Substantively, we will deal with these questions within the context of individual democracies in Latin America and in other regions of the world. (3-0) T

PSCI 4349 The Politics of the Bureaucratic Process (3 semester hours) This course analyzes the role of administrative agencies in democratic policy making. Discusses the internal, procedural determinants of policy decision making as well as the interactions between administrative agencies and other branches of government. Topics may include the development of the contemporary administrative state, administrative rule making, and control of administrative processes by Congress, the president, and the Judiciary. (3-0) R

PSCI 4354 Contemporary Political Thought (3 semester hours) Investigates the moral and political controversies shaping contemporary political thought. Considers such issues as legitimacy, justice, distribution, and representation. (3-0) R

PSCI 4356 International Political Economy (3 semester hours) Focuses on the interaction of global politics and economics, including international trade, the underpinnings of international currency exchange, multinational corporations, globalization, and other topics. Prerequisite: PSCI 3328 or PSCI 4329 or undergraduate coursework in international economics. (3-0) R
PSCI 4357 Human Rights and The Rule of Law (3 semester hours) This course focuses on the development of norms involving international human rights and law as well as major and competing theories that sometimes weigh against the development of universal human rights. Also examines the effectiveness of the courts and law, including international courts and truth commissions, in the area of human rights. (3-0) R

PSCI 4358 Social Movements (3 semester hours) The structure, causes and consequences of change-oriented social movements. Historical and contemporary case studies, including the American labor movement, the civil rights movement, and the feminist movement. (Same as SOC 4355) (3-0) R

PSCI 4364 Civil Rights Law and Society (3 semester hours) Examines the development of civil rights law, and how social ideologies are reflected and reproduced in race and sex discrimination law. Explores how power is exercised through law, and how legal change is pursued as a strategy for social reform. Topics include antislavery and the judicial process, the Reconstruction Amendments, the role of the Supreme Court in U.S. society, school segregation cases, and hate speech. (Same as SOC 4364) (3-0) Y

PSCI 4365 Law and Medicine (3 semester hours) Examines the relationship between law and medical ethics. Emphasis is placed on court cases involving reproductive privacy, wrongful life, informed consent, the right to treatment, and the right to refuse treatment. (3-0) T

PSCI 4367 Moot Court (3 semester hours) Course examines a hypothetical case which contains two constitutional issues. Based on approximately 20 actual precedents, students are expected to prepare arguments supporting both the petitioner and respondents on each constitutional issue. Students compete in tournaments against advocates from other universities. Consent of instructor required. May be repeated for credit (6 hours maximum). (1-6-0) S

PSCI 4368 Leadership (3 semester hours) This course examines the topic of political leadership. Students examine traditional and contemporary theories of political leadership and interact with current political leaders through seminar discussions. Consent of instructor required. (3-0) T

PSCI 4370 The Policy Making Process (3 semester hours) A multidisciplinary exploration of the history, ideas, and institutions that set the stage for politics. This course is part of the Archer Program and is restricted to Archer Fellows. Prerequisite: Consent of Director of Archer Program required. (3-0) R

PSCI 4372 Advocacy in Applied Settings (3 semester hours) This is a course on communication and advocacy. Students examine how people make cases for their needs in organizations, especially governmental and political ones. This course is part of the Archer Program and is restricted to Archer Fellows. Prerequisite: Consent of Director of Archer Program required. (3-0) R

PSCI 4373 Beyond Congress and White House (3 semester hours) This course explores the sources and use of power in Washington. It focuses attention upon such issues as the constitutional and technological limits to power, power and the media, and the struggle for control over national memory and language. This course is part of the Archer program and is restricted to Archer Fellows. Prerequisite: Consent of Director of Archer Program required. (3-0) R

PSCI 4396 Selected Topics in Government and Politics (3 semester hours) Subject will vary from semester to semester. May be repeated for credit (9 hours maximum). (3-0) R

PSCI 4V76 Archer Center Washington Internship (3-6 semester hours) This course is part of the Archer Program and is restricted to Archer Fellows. May be repeated for credit. Prerequisite: Consent of Director of Archer Program required. (3-6-0) R

PSCI 4V97 Independent Study in Government and Politics (1-6 semester hours) Independent study under a faculty member’s direction. May be repeated for credit (6 hours maximum). Consent of instructor required. (1-6-0) S

PSCI 4V98 Internship (1-6 semester hours) May be repeated for credit (6 hours maximum). Consent of instructor required. This course can only be taken Credit/No Credit. ([1-6]-0) S

PSCI 4V99 Senior Honors in Government and Politics (1-6 semester hours) For students conducting independent research for honors theses or projects. May be repeated for credit (6 hours maximum). ([1-6]-0) S

Psychology Course Descriptions

PSY 1110 Living Learning Community Colloquium (1 semester hour) Designed to develop leadership skills among Living Learning Community students through interactive discussions, presentations, and service learning activities. Areas explored include global issues, diversity, ethics, and cross-cultural communications. Acceptance into the Living Learning Community program is required. Prerequisite: RHET 1101. (1-0) Y

PSY 2301 (PSYC 2301) Introduction to Psychology (3 semester hours) Overviews the major theories and scientific research examining the human mind and behavior. The topics range from studies of perception, cognition, memory, language, and
thought to studies of development, personality, relationships, motivation, abnormal patterns of thought and behavior, and cultural differences. (3-0) S

**PSY 2317 (PSYC 2317) Statistics for Psychology (3 semester hours)** Introduces concepts and calculations of descriptive statistics, including mean, sum of squares, variance, standard deviation, correlation and regression. It also includes the logic of statistical decision making, the use of binomial and Gaussian distributions, and fundamental considerations in the design of psychological experiments. Prerequisite: MATH 1300, 1306, 1314, 1324 or higher. (3-0) S

**PSY 3100 Careers in Psychology (1 semester hour)** A one-credit course examining the professions that utilize the theories, research findings, and practices from the field of psychology. Students gain information and skills that will help them select and pursue a career in psychology or a related field. Course information will be conveyed through readings, homework assignments, exercises, internet searches, guest speakers, in-class exercises and group discussions. It is recommended that all Psychology majors take this course during their sophomore year. Prerequisite: PSY 2301. (1-0) Y

**PSY 3310 Child Development (3 semester hours)** Introduction to psychological theory and research on physical, cognitive, social, and emotional development from birth to adolescence. Credit given for only one of PSY/CLDP 3310 or PSY/CLDP 4334. (Same as CLDP 3310) (3-0) Y

**PSY 3322 Psychology of Adjustment (3 semester hours)** Students gain a broad understanding of effective living and coping, combining basic scientific and applied perspectives to help students sort through the best approaches to personal adjustment. Among the topics covered are coping, stress, personality, the self and identity, interpersonal communication, work and career development, adult development, health, abnormal psychology, love and intimacy, and therapies. (3-0) Y

**PSY 3324 Psychology of Gender (3 semester hours)** Examines gender as it is expressed in the personality of the individual and in the social relations of dyads and groups. Topics include gender identity, sexual orientation, gender differences in intellectual abilities and personality characteristics, gender as it is expressed in friendships, marriage, and sexuality, and cultural gender stereotypes as they affect individual psychology and personal relationships. (Same as GST 3301) (3-0) Y

**PSY 3331 Social Psychology (3 semester hours)** Theory and research on social perception, socialization, attitude change and social influence, aggression, interpersonal attraction, deviance and control, alienation, and commitment. (3-0) Y

**PSY 3332 Social and Personality Development (3 semester hours)** The study of the forces affecting the socialization of children. Emphasis is placed on children’s interactions with others and how this influences their development in such areas as self-concept, identity, and morality. Prerequisite: CLDP/PSY 3310, 3339, or 4334. (Same as CLDP 3332) (3-0) Y

**PSY 3333 Approaches to Clinical Psychology (3 semester hours)** A survey of therapeutic approaches used in modern psychotherapy. Covers a variety of psychotherapeutic approaches, including psychodynamic, behavioral, humanistic, cognitive, and medical. Prerequisite: PSY 2301. (3-0) Y

**PSY 3336 Infancy (3 semester hours)** Review of relevant developmental theories and processes as well as skills acquired in motor, sensory-perceptual, cognitive, and social domains from birth through two years of age. Prerequisite: CLDP/PSY 3310, 3339, or 4334. (Same as CLDP 3336) (3-0) Y

**PSY 3338 Adolescence (3 semester hours)** Covers physical, cognitive, and socioemotional development of adolescents. Topics include puberty, identity development, family processes, peers, schools, achievement and adolescent problems. (Same as CLDP 3338) (3-0) Y

**PSY 3339 Educational Psychology (3 semester hours)** This course focuses on the psychological foundations of education and teaching. Topics that are covered include development, individual variations, learning and cognitive processes, motivation, classroom management, and assessment. (Same as CLDP / ED 3339) (3-0) S

**PSY 3342 Exceptional Children (3 semester hours)** Examines the characteristics of exceptional children and their education, including children with disabilities (learning, emotional/behavioral, communication and physical) as well as those who are gifted. The causes and assessment of exceptionality are examined, along with educational and social policy considerations. Prerequisite: CLDP/PSY 3310, 3339, or 4334. (Same as CLDP 3342 and SPAU 4325) (3-0) Y

**PSY 3360 Historical Perspectives on Psychology: Mind and Machines since 1600 (3 semester hours)** Basic frames of reference in 20th-century psychology and their historical development in Western thought since 1600 with an emphasis on issues involved with minds, brains, and machines. Includes behaviorism, learning theory, artificial intelligence, gestalt, structural and cognitive approaches. Prerequisite: PSY 2301 or CGS 2301. (Same as CGS 3325) (3-0) Y

**PSY 3361 Cognitive Psychology (3 semester hours)** Theory and research on perception, learning, thinking, psycholinguistics, and memory. Prerequisite: PSY 2301 or CGS 2301. (Offered in the spring semester) (Same as CGS 3361) (3-0) Y

**PSY 3362 Cognitive Development (3 semester hours)** A contrast of Piagetian, behaviorist, and information-processing approaches to the development of cognitive processes throughout childhood. Prerequisite: CLDP/PSY 3310, 3339, or 4334. (Same as CLDP 3362) (3-0) Y
Course Descriptions - Psychology

PSY 3363 Evolution of Behavior (3 semester hours) This course places human behavior in an evolutionary framework, showing how much human behavior has been subject to natural selection and is genetically transmitted. Emphasizes the continuities between human and non-human behavior. Classic ethological theories and sociobiology are discussed. (3-0) T

PSY 3364 Animal Communication (3 semester hours) Surveys the diverse forms of communication used throughout the animal kingdom. Topics include the social contexts of communication, the sensory and neural mechanisms involved in signal production and perception, as well as the evolutionary and ecological forces that shape these systems in their natural environments. (3-0) Y

PSY 3366 Motivation and Achievement (3 semester hours) Examines theories and research on achievement and achievement motivation. Topics include methods of assessing school achievement, theories of achievement motivation, sociocultural and situational influences. Also explores classroom applications. Prerequisite: CLDP/PSY 3339. (Same as CLDP 3366) (3-0) Y

PSY 3392 Research Design and Analysis (3 semester hours) Advanced techniques for research design and data analysis in the behavioral sciences, with an emphasis on analysis of variance and the general linear model. Prerequisite: PSY 2317 or STAT 1342. (3-0) Y

PSY 3393 Experimental Projects in Psychology (3 semester hours) Laboratory and field experience in designing and conducting psychological research, with a major emphasis on the writing of research reports. This course fulfills the advanced writing requirement for Psychology majors. Prerequisite: PSY 3392 or PSY 3490. (Same as CGS 3340) (3-0) S

PSY 3490 Accelerated Quantitative Methods (4 semester hours) An honors-level survey of statistical methods in psychology. Presents measurement techniques, basic research designs, and statistical analyses developed in terms of the general linear model. Draws upon examples primarily from cognitive and social psychology to illustrate methods in behavioral research. Prerequisite: Grade of B+ or better in MATH 1300, 1306, 1314, 1324 or higher, or permission of instructor. (4-0) R

PSY 4323 Cultural Diversity and Psychology (3 semester hours) Explores cultural diversity and multiculturalism from both scientific research and practical perspectives. Emphasis is placed on increasing students’ awareness of differing world views, privilege, the experience of self, and the interactions between different cultures. (3-0) Y

PSY 4324 The Psychology of Prejudice (3 semester hours) Examines prejudice and discrimination, applying social-psychological theory and research to various social and historical issues, including stereotypes and prejudice in the media, old-fashioned and modern prejudice, sexism, heterosexism, classism, acculturation, inter-group contact, and the application of theory to policies including public housing, Affirmative Action, drug laws and welfare. Prerequisite: PSY 2301. (3-0) Y

PSY 4327 Stress Management (3 semester hours) This course examines stress management from scientific and practical perspectives. Topics include stress psychopathology, stress and illness/disease, interventions to reduce stress, relaxation techniques, and strategies of decreasing stressful behavior. Prerequisites: NSC 3361 and PSY 2301. (3-0) Y

PSY 4328 Health Psychology (3 semester hours) An examination of psychological factors as they influence physical disease; the involvement of personality variables and stress in heart disease, diabetes, and cancer. Behavioral interventions and their effects are discussed. Prerequisites: NSC 3361 and PSY 2301. (3-0) Y

PSY 4331 Personality (3 semester hours) A comparative survey and analysis of theories of personality, including consideration of research and research techniques. Prerequisite: PSY 2301. (3-0) Y

PSY 4332 Psychology in the Workplace (3 semester hours) Examines scientific knowledge about effective behavior in the workplace and provides practical ways to improve behavioral skills. Topics include communication, leadership, motivation, decision-making, teamwork, conflict and stress management, and abuse in the workplace, including sexual harassment. Prerequisite: PSY 2301. (3-0) Y

PSY 4333 Human Relations (3 semester hours) Factors Overviews theory and research on human relations across the lifespan. Topics include relationships development and maintenance, intimacy, conflict, conflict resolution and other aspects of human relationships. Four areas of the lifespan are highlighted: childhood, adolescence, early/middle adulthood, and later adulthood. Prerequisite: PSY 2301. (3-0) Y

PSY 4334 Lifespan Development (3 semester hours) Covers physical, cognitive, and socioemotional development throughout the human lifespan. Topics include development of the brain, information processing, self development, attachment family processes, and aging. Credit given for only one of PSY/CLDP 3310 or PSY/CLDP 4334. (Same as CLDP 4334) (3-0) S

PSY 4343 Abnormal Psychology (3 semester hours) Considers patterns of abnormal human behavior, approaches to psychotherapy, and related research. (3-0) S

PSY 4344 Child Psychopathology (3 semester hours) Present various views of clinical issues in childhood from sociological, anthropological, and psychological perspectives. Historical views of children are examined in terms of the evolution of current perspectives on childhood psychopathology. Prerequisite: CLDP/ PSY 3310, 3339, or 4334. (Same as CLDP 4344). (3-0) Y
PSY 4345 Violence in the Family (3 semester hours) Explores the area of family violence with primary emphasis on the problems of spouse abuse and child abuse. Analysis of each of these areas of family violence focuses specifically on the epidemiology of the problem, characteristics of the families, etiological theories, and treatment approaches. (Same as CLDP 4345) (3-0) Y

PSY 4346 Human Sexuality (3 semester hours) Covers a wide range of issues concerning behavioral and biological aspects of sexuality. Topics include how to judge sexual research, values and sex, love and intimacy, male and female sexual anatomy and physiology, sexually transmitted diseases, patterns of sexual response, sexual problems and therapies, the development of sexuality, sexual orientation, reproductive sexuality, forcible sexual behavior, and social issues in sexuality. (3-0) S

PSY 4347 Marriage and Family Psychology (3 semester hours) Examines family life styles from sociopsychological viewpoint with emphasis on personal awareness, growth and satisfaction in interpersonal relations. Research topics include dating, mate selection, communication, sexual adjustment, parenting, cohesion and adaptability, and divorce. (Same as CLDP 4347) (3-0) Y

PSY 4359 Cognitive Neuroscience (3 semester hours) Examines how modern cognitive neuroscientists explore the neural underpinnings of perception, memory, attention, language and emotion. Investigates how the brain-bases of these functions are uncovered by ingenious observations of clinical populations (including brain-damaged and schizophrenic patients), animal and human electrophysiological techniques, and powerful new functional neuroimaging tools. Prerequisite: PSY/CGS 3361 or CGS 2301. (Same as CGS 4359 and NSC 4359) (3-0) Y

PSY 4362 Perception (3 semester hours) Considers the processes by which the individual gathers information from the external world, the physiological basis of those processes, and how they develop throughout the life span of the individual. Prerequisite: CGS 2301 or PSY 2301. (3-0) Y

PSY 4364 Attention and Memory (3 semester hours) Factors influencing the capacity to pick up, organize, and remember complex information. Prerequisite: CGS/PSY 3361, or consent of instructor. (3-0) R

PSY 4365 Psychology of Music (3 semester hours) An examination of the psychological bases for musical understanding, emotional responses to music, musical creativity, and the dramatic use of music, including relationships between musical structure and the representation of psychological states. (3-0) R

PSY 4370 Industrial and Organizational Psychology (3 semester hours) Overview of psychological theory and research bearing on recruitment, personnel selection, training and development, job design, work group design, work motivation, leadership, performance assessment, and job satisfaction measurement. Prerequisite: PSY 2301. (3-0) Y

PSY 4372 Forensic Psychology (3 semester hours) Explores forensic psychology as a profession and a field of study. Topics may include criminal profiling, lie detection, insanity and competency, spouse and child abuse, child custody, and police selection, training, and interrogation. Course content varies with expertise of instructor. Prerequisite: PSY 2301. (3-0) Y

PSY 4373 Psychological Assessment (3 semester hours) Explores both theory and application of psychological assessment, especially concerning individual differences in ability and personality, as well as for diagnostic purposes. Test construction and validation will be discussed and specific examples of tests will be presented. Prerequisite: PSY 2301. (3-0) T

PSY 4374 Judgment and Decision Making (3 semester hours) Processes of human judgment are examined from the perspective of cognitive, and social psychological theories and research. Focus is on specific domains of judgment, such as attitude formation and change, biases and prejudices, decision making in organizations, and marketing strategies to illustrate basic principles of decision making. (3-0) Y

PSY 4375 Honors Seminar (3 semester hours) A course for students who conduct undergraduate thesis research in the School of Behavioral and Brain Sciences. The seminar explores the different types of thesis research, current research opportunities in the school, and appropriate techniques for writing the thesis proposal and final thesis report. Broader issues of professional development are also explored. Permission of Associate Dean required. This course is required for all students seeking School Honors (minimum GPA of 3.40 and 30 hours at UTD). Usually offered only in spring semester. (Same as CGS 4375, CLDP 4375, NSC 4375, and SPAU 4375) (3-0) Y

PSY 4377 Conflict Resolution (3 semester hours) Examines theory research and practice of negotiation, mediation, and conflict resolution. Topics include origins of aggression and conflict, techniques of negotiation, and methods of conflict resolution. Students gain practical experience in dispute resolution. Required 40 hours Texas Mediator training included. (3-0) Y

PSY 4393 Language in Culture and Society (3 semester hours) Influence of languages on nonlinguistic aspects of culture and society. Topics include patterns of communication, speech community, communication and social structure, varieties of language, and the analysis of communicative competence and communicative performance. (Same as SPAU 4393) (3-0) Y
Special Topics

Topics under the following course number vary from semester to semester. The class schedule for the current semester will list the special topic that will be offered.

PSY 4V90 Special Topics in Psychology (1-6 semester hours) May be repeated for credit as topics vary (9 hours maximum). (Same as CGS 4V90, CLDP 4V90, NSC 4V90, and SPAU 4V90) (1-6) R

Independent Study

The following independent study courses are advanced individualized learning experiences to be arranged with a supervising professor or course coordinator. Open only to qualified students by consent of instructor. Students must make appropriate arrangements with the professor or coordinator prior to the beginning of the semester (preferable at least six weeks ahead). Permission forms are available in the Associate Dean's office. Students may enroll in no more than a total of 6 semester credit hours of Independent Study courses during one semester, and may take as Independent Study a maximum of 20 percent of the total hours of course work undertaken at U.T. Dallas, or 12 semester credit hours, whichever is smaller.

PSY 4394 Internship in Psychology (3 semester hours) Students earn course credit for field experience in an applied setting. Requires working at least 8 hours per week at an approved community agency or business of the student's choice. Students keep daily job diaries, attend one class meeting per month, and write brief papers relevant to their experiences. Open to students in good academic standing with a GPA of at least 2.50 who have reached junior or senior standing (more than 53 hours). Apply for placements on the BBS web site. Graded Credit/No Credit only. (Same as CGS 4394, CLDP 4394, NSC 4394 and SPAU 4396) (3-0) S

PSY 4395 Co-op Fieldwork (3 semester hours) Students earn course credit for field experience in an approved business or government setting. Requires working at least 8 hours per week. Students will keep a journal of their workplace experience, maintain contact with the instructor, and prepare a written report that focuses on the accomplishments and insights gained through their co-op experience. Credit will not be awarded retroactively. Apply for placements through the Career Center office. May be repeated for credit (6 hours maximum). Graded Credit/No Credit only. (Same as CLDP/CGS 4395) (3-0) Y

PSY 4397 Honors Thesis (3 semester hours) Student writes an honors thesis under faculty supervision. Permission of instructor and Associate Dean required. (3-0) S

PSY 4V96 Teaching Internship (1-3 semester hours) Students work individually with faculty member in preparing and presenting course materials and tutoring students. Must have completed the relevant course with a grade of at least B and have a U.T. Dallas GPA of at least 3.00. Permission of instructor and Associate Dean required. Taken on a Credit/No Credit basis. Can be repeated for a total of 6 semester hours. (1-3) S

PSY 4V98 Directed Research (1-3 semester hours) Student assists faculty with research projects or conducts a research project under weekly faculty supervision. Taken on a Credit/No Credit basis. May be repeated for credit (12 hours maximum). (1-3) S

PSY 4V99 Individual Study (1-3 semester hours) Student studies advanced topics under weekly faculty direction. Permission of the instructor and Associate Dean required. Topics may vary. Graded Credit/No Credit only. May be repeated for credit (6 hours maximum). (1-3) S

Public Affairs Course Descriptions

PA 3304 Research Methods in Public Administration (3 semester hours) Examines methods of Public Administration research. Topics include the nature of administrative inquiry, framing a research problem, choosing a research design, developing hypotheses, sampling designs, and measuring variables. Topics will be covered as students conduct their own study. (3-0) Y

PA 3310 Public Administration (3 semester hours) Overview of management responsibilities, functions, and activities in government agencies within the framework of political values and organization dynamics. (Same as PSCI 3310) (3-0) Y

PA 3314 Financial Management (3 semester hours) Financial accounting, control, and management for efficient and effective resource use within public and nonprofit organizations. (3-0) T
PA 3323 Geographic Information Systems (3 semester hours) Provides an introduction to Geographic Information Systems, a software technology for the storage, analysis and display of spatial information. Specific GIS methods are covered for use in a variety of different applications areas and disciplines, including public administration, criminology, demographic, economic and marketing analysis, transportation studies, and environmental/geological applications. Industry standard GIS software tools are used to apply these methods. (Same as GEOG 3323 and SOCS 3323) (3-0) Y

PA 3333 Human Resources Management (3 semester hours) Leadership, motivation, decision making, conflict resolution, performance, and other important challenges of personnel management in government organizations. (3-0) T

PA 3335 Organizational Behavior (3 semester hours) Power, conflict, consensus, and other dynamic behaviors within and between public organizations, and between organizations and their constituents. (3-0) T

PA 3377 Urban Planning and Policy (3 semester credit hours) Explores important substantive areas and concepts in the field of urban and regional planning and current urban planning and policy issues and debates. Topics include: forces that have historically guided and are currently guiding U.S. urbanization; land use, growth management, transportation and traffic congestion, economic development, housing and community development, environmental planning; legal, environmental, governmental contexts. (Same as GEOG3377 and SOC 3377) (3-0) R

PA 4312 Organizations (3 semester hours) Study of the structures and dynamics of organizations. Examines problems of motivation, leadership, morale, networks, communications, hierarchy, control, and technology. (Same as SOC 4340) (3-0) T

PA 4345 Negotiation and Conflict Resolution (3 semester hours) This course will introduce students to the theory and practice of negotiations in the public sector. Students analyze the parties, issues and strategies in negotiations and will take part in many negotiation simulations to develop their skills in issues identification and problem resolution. The course will begin with the study of two-party negotiations and progress to multi-party, multi-issue negotiations. (Same as PSCI 4345) (3-0) T

PA 4350 Politics of Bureaucracy (3 semester hours) This course will provide an in-depth knowledge of some of the major issues in bureaucracy. It focuses on understanding the internal processes and politics as well as some of the external factors that play an important role in the dynamic world of public administration. This course will include varied topics such as administrators as policymakers, the role of ethics and accountability, and external intervention in the daily activities of the policymakers in order to explore the challenges faced by public administrators in the organization and management of public agencies. (3-0) R

PA 4351 Urban Management (3 semester hours) Examination of ways in which the fiscal and administrative policies of local government shape the structure of opportunities and incentives in urban areas. (3-0) R

PA 4355 Nonprofit Organizations (3 semester hours) This course will address the basic concepts of the often overlooked trillion dollar nonprofit sector (also known as the Third Sector) that among others includes education, research, health care, art, religion, social services, advocacy, legal services, international assistance, foundations and mutual benefit organizations. This comprehensive course will provide a thorough introduction and understanding to the sector, such as the history of nonprofit organizations in America, qualifications for charitable groups, and international comparisons. It will also address voluntary sector dynamics such as board and volunteer administration and management. Topics may vary. (Same as SOC 4345) (3-0) R

PA 4360 Ethics in Public Administration (3 semester hours) Examines the relationship between ethical choices and the decision-making of public managers. The ethics of organizational policies and public policies are also examined. (3-0) R

PA 4370 Leadership (3 semester hours) Explores the gamut of leadership theories and modern views of requisites for success in positions of leadership. Students will take from this course knowledge of leadership theories and practical knowledge for applying leadership principles in any organizational setting. (3-0) Y

PA 4396 Topics in Public Administration (3 semester hours) Subject matters of current interest. Topics vary from semester to semester. May be repeated for credit (9 hours maximum). (3-0) R

PA 4V97 Independent Study in Public Administration (1-9 semester hours) Independent study under a faculty member’s direction. May be repeated for credit. Consent of instructor required. (1-9)-0 S

PA 4V98 Internship (1-6 semester hours) May repeat for credit (6 hours maximum). Consent of instructor required. This course can only be taken Credit/No Credit. (1-6)-0 S

PA 4V99 Senior Honors in Public Administration (1-6 semester hours) For students conducting independent research for honors theses or projects. May be repeated for credit (6 hours maximum). (1-6)-0 S

Rhetoric Course Descriptions

RHET 1101 Oral Communication/Critical Thinking (1 semester hour) This class uses small group assignments and discussions to focus on the most important aspects of adapting to college. Students take part in discussions and demonstrations
related to personal management, motivation, academic skills, and work habits, communication skills, and social relationships. Specific exercises are designed to promote critical thinking and creative planning. Topics may vary. (1-1) S

**RHET 1302 (ENGL 1302) Rhetoric (3 semester hours)** The course presents an integrated approach to writing, reading, and critical thinking by developing the grammatical, logical, and rhetorical skills necessary for university writing. All classes work in a computerized learning environment. Students are taught basic computer literacy and submit all work electronically and on paper. (3-0) S

**RHET 4074 Student Leadership (0 semester hours)** This is the required course for all students selected to participate in the First Year Leader Program, in which students team-teach the RHET 1101 Oral Communication and Critical Thinking course. (May be repeated up to three times.) (2-0) S

### Social Science Course Descriptions

**SOCS 2V95 Individual Instruction in the Social Sciences (1-6 semester hours)** Individual study under a faculty member’s direction. May be repeated for credit. Consent of instructor required. ([1-6]-0) R

**SOCS 3111 Careers in the Social Sciences (1 semester hour)** This one-credit course is designed to provide social sciences majors and those interested in the social sciences with information and skills that will help them select and pursue a career in their major or a related field. (Same as ISSS 3111) (1-0) Y

**SOCS 3323 Geographic Information Systems (3 semester hours)** An introduction to Geographic Information Systems with a focus on GIS methods and procedures used in the Social Sciences. Cartographic procedures for displaying the results of social scientific research are presented. Specific GIS methods are covered for use in several different applications areas, including political geography, transportation studies, land use for cadastral and zoning applications, and spatial statistics in the context of criminology. Industry standard GIS software tools are used to apply these methods. (Same as GEOG 3323 and PA 3343) (3-0) Y

**SOCS 3361 Social Issues and Ethics in Computer Science and Engineering (3 semester hours)** This course exposes students to major theoretical approaches and modes of thinking in the social sciences while exploring a range of important issues in computing and engineering, and the interrelationship between technology and important elements of social systems. Areas of exploration include the interface between technology, culture, economy, gender, politics, and religion. Issues of professional ethics, computer crime, privacy, intellectual property, the balance between scientific advances and the acceptability of risk, globalization, and the relevance of constitutional issues are all explored by drawing upon empirical research and important research methodologies in the social sciences. (Same as ECS 3361) (3-0) Y

**SOCS 3405 Introduction to Social Statistics with Lab (4 semester hours)** This course introduces students to the basic tools of statistics and shows how they are used in the analysis of social science data. A fundamental understanding of these tools is a critical foundation for social science research in many fields. The course covers descriptive statistics, inference from samples, hypothesis testing, and the basics of regression analysis. NOTE: This course is required of all social science majors and is a prerequisite for a required course in social science research methods within each discipline (for example CRIM 3304, ECON 3304, GEOG 3304, PA 3304, or SOC 3304). Prerequisite: College Algebra (MATH 1314 or equivalent). (4-0) S

**SOCS 3V96 Selected Topics in the Social Sciences (1-3 semester hours)** Subject matter will vary from semester to semester. May be repeated for credit (9 hours maximum). ([1-3]-0) R

**SOCS 4320 Social Entrepreneurship (3 semester hours)** This course is about providing those interested in entrepreneurial ventures with primarily a social focus with the skills and knowledge necessary to accomplish their goals. The course will be seminar style and require a practicum. Topics to be included are entrepreneurship in the non-profit sector, entrepreneurship in political campaigns, new public management and the role of entrepreneurship in government and public services, urban planning, and geographical information sciences as a tool all entrepreneurs can use in the creation of new opportunities. (3-0) R

**SOCS 4V98 Pre-Law Internship (3-6 semester hours)** An internship with law firms or judges that will expose students to legal issues and to the practice of law. An excellent exposure to the legal profession. May repeat for credit (6 hours maximum). Consent of instructor required. This course can only be taken Credit/No Credit. ([3-6]-0) S

### Sociology Course Descriptions

**SOC 1301 (SOCL 1301) Introduction to Sociology (3 semester hours)** An overview of the sociological perspective and its application to social research and social policy. (3-0) Y
SOC 2300 Introduction to Gender Studies (3 semester hours) An introduction to the way gender shapes individuals, social institutions and culture. Examines gender, class, sexuality, race/ethnicity, and nationality as interactive systems. Topics include biological arguments about gender and sexuality; the cultural construction of gender; the psychology of sex roles; the ways gender shapes families, workplaces and other social institutions. (Same as GST 2300) (3-0) Y

SOC 2319 (SOCI 2319) Race, Gender and Class (3 semester hours) The study of how race, gender, and class systems are interwoven. Explores how the multiple statuses of individuals (race, gender, and class) combine to produce packages of privileges and disadvantages. Topics include the social meanings of color, sex/gender systems in historical and contemporary perspectives, theories of power, stereotyping, affirmative action, and welfare debates. (3-0) Y

SOC 3303 Social Theory (3 semester hours) Survey of the main currents of social theory as developed by European and American theorists and applied in contemporary social thought. Prerequisite: SOC 1301. (3-0) Y

SOC 3304 Research Methods in Sociology (3 semester hours) Examines methods of sociological research. Topics include the nature of scientific inquiry, framing a research problem, choosing a research design, developing hypotheses, sampling designs, and measuring variables. Topics will be covered as students conduct their own study. (3-0) Y

SOC 3306 Professional Writing for Sociology (3 semester hours) A review of professional writing and analytic skills used by sociologists. Students will prepare and revise a series of written assignments including, but not limited to, a literature review, a research design, a research report, and a policy analysis. Satisfies the Advanced Writing Requirement for sociology majors. Enrollment limited to sociology majors except with permission of instructor. Prerequisites: SOC 1301, 3303, and 3304. (3-0) Y

SOC 3314 Individual and Society (3 semester hours) The study of the relationship among the individual, social structure, and culture. Explores self-concept and personality, the process of socialization, role-taking and social interaction, norms, values, group membership, and group processes. (3-0) R

SOC 3321 Deviance (3 semester hours) Analysis of historical and contemporary perspectives which propose the causes, consequences, and cures for deviance. Description of theories, research, and public policy associated with efforts to control deviant behavior and deviant groups, and to establish normalcy. (3-0) R

SOC 3322 Social Problems (3 semester hours) An overview of how sociological concepts and approaches can be applied to the study of the causes and consequences of various social issues in contemporary society. Topics may include poverty, crime, violence, social isolation, social conflict, and failing social institutions. (3-0) T

SOC 3325 Race, Ethnicity, and Community (3 semester hours) Considers cultural and social behavior in multiracial and multiethnic societies. Issues include the formation and maintenance of individual and group identity, patterns of socioeconomic achievement, intergroup conflict, and the causes and consequences of public policy. (3-0) R

SOC 3331 Sociology of Education (3 semester hours) An examination of how educational institutions reflect and, in turn, influence social, economic, and political forces in the larger society, with an emphasis on education in the United States. Major topics will include the relationship between schooling and social inequality; how public policies such as Brown v. Board of Education and No Child Left Behind have shaped American education; current public debates over educational equity and effectiveness; and the challenges facing public education in post-industrial society. (3-0) R

SOC 3332 Social Control and Criminal Sanctions (3 semester hours) Examines the means by which society attempts to control the deviant/criminal conduct of its members. Analysis of formal and informal means and a variety of institutions and social processes meant to deter, punish, and reform inappropriate conduct. Prerequisite: CRIM 3302 or CRIM 3303. (Same as CRIM 4305) (3-0) R

SOC 3333 Religion in Society (3 semester hours) This course explores religion as a significant force and its impact on other social and cultural systems, including the family, the community, politics, the economy, education, and other social arenas. The course examines the nature and effect of religious organizations and ideas in the United States and other countries and religions. (3-0) R

SOC 3336 Culture Regions (3 semester hours) Survey of a major region of the world as defined by a set of common cultural traditions and institutions such as Latin America, the Middle East, Sub-Saharan Africa, or South Asia. Each time the course is offered, it will review the key cultural, social, economic, and political features of the region being addressed. The specific region to be studied will be announced in advance, and the course may be repeated for credit when a different culture region is treated. (3-0) Y

SOC 3342 The Life Cycle (3 semester hours) An examination of the institutions that shape the course of people's lives from birth to death. Topics include primary socialization, family, schools, peer groups, occupations, retirement, and death. (3-0) R

SOC 3343 Sociology of the Family (3 semester hours) Trends in family life are examined with special attention to how these relate to changes in men's and women's roles. Topics include sex-role socialization, division of labor in the household, sexuality, emotional aspects of marriage, marital power and decision making, and divorce. (3-0) R
SOC 3352 Gender Roles (3 semester hours) Examines female and male gender roles in both historic and contemporary contexts. Topics may include the sex/gender distinction, gender socialization, masculinities, the sexual division of labor, gender and power, and the interaction of gender with race, class, and sexuality. (3-0) R

SOC 3353 Law and Gender (3 semester hours) Examines how laws and legal institutions reflect and reproduce cultural notions of gender. Focuses on how legal equality and sex discrimination have been defined and challenged. Topics include rape law, reproductive issues, marriage and divorce, pornography, workplace regulations, and, generally, how gender and race ideologies interact in legal decision making. (Same as PSCI 3353) (3-0) R

SOC 3354 Gender, Society, and Politics (3 semester hours) Addresses the influence of gender on the distribution of public goods and the way gender, interacting with race and class, shapes social, political, and economic institutions. Introduces students to traditional notions of rights and citizenship as conceptual underpinnings for contemporary political and legal debates (on welfare, reproductive rights, childcare, job segregation, women in the military, prostitution). (Same as PSCI 3354 and GST 3303) (3-0) T

SOC 3357 Spatial Dimensions of Health and Disease (3 semester hours) Examines the spatial dimensions of health, disease, and the public health and health care systems. Provides an introduction to spatial epidemiology and a bridge to the terminology of medical and health care professionals. (Same as GEOG 3357). (3-0) Y

SOC 3358 Population: Concepts and Issues (3 semester hours) Introduces the key measures, data sources, concepts and theories to document and understand the variation of fertility and mortality, interregional migration, population distributions and their compositions in space and time. Historic, present and future population trends are discussed and analyzed in relation to biological principles and environmental challenges as well as diverging societal organizations and economic constraints. (Same as GEOG 3358). (3-0) Y

SOC 3361 Crime and Justice Policy (3 semester hours) Study of the forms, meanings, measurements, costs, and explanations for crime. Analysis of criminal justice policy, including issues of social control, deterrence, punishment, rehabilitation, danger, and justice. Prerequisite: CRIM 3302 or CRIM 3303. (Same as CRIM 3311) (3-0) T

SOC 3362 Youth Crime and Justice (3 semester hours) Study of the social phenomenon of juvenile delinquency and state supervision of youths. The causes of delinquency and the social and legal agencies established to deal with it. (Same as CRIM 3310) (3-0) R

SOC 3372 Population and Development (3 semester hours) Examines the relations between population, development, and the environment. Essential components of demographic analysis lay the foundation for a critical evaluation of demographic transition theory. Other topics include public health, population structure and life chances, cultural differences and women’s status, aging, environmental impacts and population policy. (Same as ECON 3372 and GEOG 3372) (3-0) T

SOC 3377 Urban Planning and Policy (3 semester hours) Explores important substantive areas and concepts in the field of urban and regional planning and current urban planning and policy issues and debates. Topics include: forces that have historically guided and are currently guiding U.S. urbanization; land use, growth management, transportation and traffic congestion, economic development, housing and community development, environmental planning; legal, environmental, governmental contexts. (Same as GEOG 3377 and PA 3377) (3-0) R

SOC 4302 Class, Status, and Power (3 semester hours) The nature of systems of differentiation and ranking in societies and their consequences; examination of how prestige, occupational skills, education, and economic assets are used to create class distinctions in the United States; the impact of class on life chances; concepts and processes of social mobility; and the influence of power inconsistencies on income, wealth, and status. Prerequisites: SOC 1301, 2319, or 3303. (3-0) Y

SOC 4311 Gender and Education (3 semester hours) An examination of the impact of gender, race, and class on the educational experiences of men and women. Considers the way educational institutions both empower individuals and reproduce social inequalities based on class, gender, ethnicity, and sexuality. Topics include Enlightenment discussions of gender and reason, co-ed vs. single sex education, curriculum transformation efforts to include the history of the experience of women and ethnic minorities, feminist and critical pedagogies. (Same as GST 4311) (3-0) Y

SOC 4340 Organizations (3 semester hours) A survey of current ideas about the structures and dynamics of modern formal organizations. Considers such topics as technology, hierarchy, goals, information systems, control structures, power and politics, decision making, environments, and change. (Same as PA 4312) (3-0) T

SOC 4345 Nonprofit Organizations (3 semester hours) This course will address the basic concepts of the often overlooked trillion dollar nonprofit sector (also known as the Third Sector) that among others includes education, research, health care, art, religion, social services, advocacy, legal services, international assistance, foundations and mutual benefit organizations. This comprehensive course will provide a thorough introduction and understanding to the sector, such as the history of nonprofit organizations in America, qualifications for charitable groups, and international comparisons. It will also address voluntary sector dynamics such as board and volunteer administration and management. (Same as PA 4355) (3-0) R
SOC 4348 Business and Technology (3 semester hours) This course explores the role of technological innovation in macroeconomic performance and firm-level business activity. It highlights theoretical and research contributions from across the several social sciences, engineering, and management. Topics included all reflect on how technical advances emerge from - and have their impacts shaped within - markets and broader societal organization. The roles of domestic political institutions and public policy, as well as geo-political contexts, will be used to illustrate the broader implications of the technology-business relationship. Prerequisite: ECON 2302 or permission of the instructor. (Same as ECON 4348) (3-0) Y

SOC 4350 Political Sociology (3 semester hours) The analysis of political behavior, political institution formation and change, and the state, from a sociological perspective; voting behavior, political attitude formation, and the interaction of the state with other social institutions. (3-0) R

SOC 4355 Social Movements (3 semester hours) The structure, causes, and consequences of change-oriented social movements. Historical and contemporary case studies, including the American labor movement, the civil rights movement, and the feminist movement. (Same as PSCI 4358) (3-0) R

SOC 4356 Social Welfare Policy (3 semester hours) Explores the origins of social welfare institutions, programs, and services in American and European societies. Reviews critiques of social welfare policies from diverse ideological and political perspectives as well as recent studies of program implementation and effectiveness. Examines the politics of social welfare reform. (3-0) R

SOC 4361 Law and Society (3 semester hours) Analyzes laws and legal institutions as forms of regulation and social control. Explores the links between legal decision making, social structure, and cultural knowledge systems. Theoretical perspectives on law and society, law and ideology, the relation of law to public policy, and legal change as a strategy of social reform are explored. (3-0) R

SOC 4364 Civil Rights Law and Society (3 semester hours) Examines the development of civil rights law, and how social ideologies are reflected and reproduced in race and sex discrimination law. Explores how power is exercised through law, and how legal change is pursued as a strategy for social reform. Topics include antislavery and the judicial process, the Reconstruction Amendments, the role of the Supreme Court in U.S. society, school segregation cases, and hate speech. (Same as PSCI 4364) (3-0) Y

SOC 4370 Poverty and Unemployment (3 semester hours) The historical, economic, political, and cultural context of poverty and unemployment in the United States, and the social and governmental response to these conditions. (3-0) R

SOC 4371 Mental Health and Illness (3 semester hours) Explores the diverse, disturbing, disruptive, and disabling phenomena of mental disorders. Topics to be covered include the classification of mental disorders, the etiology and epidemiology of mental illnesses, and the history of societal responses to the mentally ill, including public policies. (3-0) R

SOC 4372 Health and Illness (3 semester hours) An examination of the social conditions and correlates of diseases, the social behavior of the sick, health institutions and professions, and the formulation and implementation of health policies and programs. (3-0) R

SOC 4375 Gender and Work (3 semester hours) A sociological analysis of historical trends and current patterns of gender inequality in paid and domestic work; examination of theories and research related to the role of gender in shaping labor market opportunities, experiences, and rewards; identification of various forms of workplace discrimination and potential remedies. (3-0) R

SOC 4377 Aging Society (3 semester hours) A study of the aging of society, including the biomedical, social, economic, and political forces shaping societal aging and public policies for the aged. (3-0) R

SOC 4378 Work and Occupations (3 semester hours) The structure of work, occupations, and industry with an emphasis on the rise of management and the modern corporation, productivity and work performance, the growth and decline of labor unions, and the emergence of service and high-tech industries. (3-0) R

SOC 4380 Women, Work and Family (3 semester hours) An examination of the relationship between women’s work for pay in the marketplace and their unpaid work in homes across time and in different cultures. Topics include the historical separation of work from home under capitalism; division of household labor between men and women; public policy initiatives (socialized/commercial housework and daycare, family leave, telecommuting, part-time and flex-time work) designed to make juggling work and family easier; the ways class, race, and ethnicity constrain and enable women’s choices. (Same as GST 4380) (3-0) Y

SOC 4396 Selected Topics in Sociology (3 semester hours) Subject matter will vary from semester to semester. May be repeated for credit (9 hours maximum). (3-0) R

SOC 4V97 Independent Study in Sociology (1-6 semester hours) Independent study under a faculty member’s direction. May be repeated for credit (6 hours maximum). Consent of instructor required. ([1-6]-0) S

SOC 4V98 Internship (1-6 semester hours) May repeat for credit (6 hours maximum). Consent of instructor required. This course can only be taken Credit/No Credit. ([1-6]-0) S
Software Engineering Course Descriptions

SE 2V95 Individual Instruction in Computer Science/Software Engineering (1-6 semester hours) Individual study under a faculty member's direction. May be repeated for credit as topics vary (6 hours maximum). Consent of instructor required. (Same as CS 2V95) (1-6)-0 R

SE 3195 Special Topics in Computer Science/Software Engineering (1 semester hour) May be repeated for credit as topics vary (4 hours maximum). Must be taken Credit/No Credit. Consent of instructor required. (Same as CS 3195) (1-0) R

SE 3306 Mathematical Foundations of Software Engineering (3 semester hours) Boolean logic, first-order logic, models of first-order logic. Introduction to program verification, applications in Software Engineering. Completeness Theorem. Regular expressions, regular sets, finite-state machines, and applications in Software Engineering. Fundamentals of Graph Theory, basic graph algorithms. Statecharts, Petri Nets and their role in Software Engineering. Prerequisite: CS 2305. (3-0) S

SE 3340 Computer Architecture (3 semester hours) This course introduces the concepts of computer architecture by going through multiple levels of abstraction, and the numbering systems and their basic computations. It focuses on the instruction-set architecture of the MIPS machine, including MIPS assembly programming, translation between MIPS and C, and between MIPS and machine code. General topics include performance calculation, processor datapath, pipelining, and memory hierarchy. Students who have already completed CS 2310 or CS/SE 4340 cannot receive credit for this course. Students cannot get credit for both CS/SE 3340 and CE/EE 4304. Prerequisite: CE/CS 1337. (Same as CS 3340) (3-0) S

SE 3341 Probability and Statistics in Computer Science and Software Engineering (3 semester hours) Axiomatic probability theory, independence, conditional probability. Discrete and continuous random variables, special distributions of importance to CS/SE, and expectation. Simulation of random variables and Monte Carlo methods. Central limit theorem. Basic statistical inference, parameter estimation, hypothesis testing, and linear regression. Introduction to stochastic processes. Illustrative examples and simulation exercises from queuing, reliability, and other CS/SE applications. Students cannot get credit for both CS/SE 3341 and CE/EE/TE 3341. Prerequisites: MATH 1326 or MATH 2419, and CS 2305. (Same as CS 3341) (3-0) S

SE 3345 Data Structures and Introduction to Algorithmic Analysis (3 semester hours) Analysis of algorithms including time complexity and Big-O notation. Analysis of stacks, queues, and trees, including B-trees. Heaps, hashing, and advanced sorting techniques. Disjoint sets and graphs. Course emphasizes design and implementation. Prerequisites: CE/CS 2336, and one of CS 3305 or SE 3306. Students cannot get credit for both CS/SE 3345 and CE/TE 3346. Prerequisite or corequisite: CS/SE 3341. (Same as CS 3345) (3-0) S

SE 3354 Software Engineering (3 semester hours) Introduction to software life cycle models. Software requirements engineering, formal specification and validation. Techniques for software design and testing. Cost estimation models. Issues in software quality assurance and software maintenance. Prerequisites: CE/CS 2336 or CS 3333, and CE/TE 3307 or CS 2305. Prerequisite or corequisite: ECS 3390. (Same as CE/CS 3354) (3-0) S

SE 3V95 Undergraduate Topics in Computer Science/Software Engineering (2-9 semester hours) Subject matter will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). (Same as CS 3V95) (2-9)-0 S

SE 4347 Database Systems (3 semester hours) This course emphasizes the concepts and structures necessary for the design and implementation of database management systems. Topics include data models, data normalization, data description languages, query facilities, file organization, index organization, file security, data integrity, and reliability. Prerequisite: CS/SE 3345. (Same as CS 4347) (3-0) Y

SE 4348 Operating Systems Concepts (3 semester hours) An introduction to fundamental concepts in operating systems: their design, implementation, and usage. Topics include process management, main memory management, virtual memory, I/O and device drivers, file systems, secondary storage management, and an introduction to critical sections and deadlocks. Prerequisites: CS/SE 3340 or CS/SE 4340 or CE/EE 4304, CS/SE 3345 or CE/TE 3346, and a working knowledge of C and UNIX. (Same as CE/CS/TE 3438) (3-0) S

SE 4351 Requirements Engineering (3 semester hours) Introduction to system and software requirements engineering. The requirements engineering process, including requirements elicitation, specification, and validation. Essential words and types of requirements. Structural, informational, and behavioral requirements. Non-functional requirements. Scenario analysis. Conventional, object-oriented and goal-oriented methodologies. Prerequisites: SE 3306, CE/CS/SE 3354 or consent of instructor. (3-0) S

SE 4352 Software Architecture and Design (3 semester hours) Introduction to software design with emphasis on architectural design. Models of software architecture. Architecture styles and patterns, including explicit, event-driven,
client-server, and middleware architectures. Decomposition and composition of architectural components and interactions. Use of non-functional requirements for tradeoff analysis. Component based software development, deployment and management. Prerequisites: SE 3306, CE/CS/SE 3354 or consent of instructor. (3-0) S

SE 4367 Software Testing, Verification, Validation and Quality Assurance (3 semester hours) Methods for evaluating software for correctness, and reliability including code inspections, program proofs and testing methodologies. Formal and informal proofs of correctness. Code inspections and their role in software verification. Unit and system testing techniques, testing tools and limitations of testing. Statistical testing, reliability models. Prerequisites: SE 3306, CE/CS/SE 3354 or consent of instructor. (3-0) S

SE 4376 Object-Oriented Programming Systems (3 semester hours) In-depth study of the features/advantages of object-oriented approach to problem solving. Special emphasis on issues of object-oriented analysis, design, implementation, and testing. Review of basic concepts of object-oriented technology (abstraction, inheritance, and polymorphism). Object-oriented programming languages, databases, and productivity tools. Prerequisite: CE/CS 2336 or equivalent. (Same as CS 4376) (3-0) S

SE 4381 Software Project Planning and Management (3 semester hours) Planning and managing of software development projects. Software process models, ISO 9000, SEI’s Capability Maturity Model, continuous process improvement. Planning, scheduling, tracking, cost estimation, risk management, configuration management. Prerequisite: CE/CS/SE 3354. (3-0) Y

SE 4399 Senior Honors in Computer Science/Software Engineering (3 semester hours) For students conducting independent research for honors theses or projects. (Same as CS 4399) (3-0) R

SE 4485 Software Engineering Project (4 semester hours) This course is intended to complement the theory and to provide an in-depth, hands-on experience in all aspects of software engineering. The students will work in teams on projects of interest to industry and will be involved in analysis of requirements, architecture and design, implementation, testing and validation, project management, software process, software maintenance, and software re-engineering. Prerequisites: at least two of SE 4351, SE 4352, SE 4367, SE 4381. (4-1) S

SE 4V95 Undergraduate Topics in Computer Science/Software Engineering (1-9 semester hours) Subject matter will vary from semester to semester. May be used as SE Guided Elective on SE degree plans. May be repeated for credit as topics vary (9 hours maximum). (Same as CS 4V95) (1-9)-0 R

SE 4V98 Undergraduate Research in Computer Science/Software Engineering (1-9 semester hours) Topics will vary from semester to semester. May be repeated for credit (9 hours maximum). Consent of instructor required. (Same as CS 4V98) (1-9)-0 R

Speech-Language Pathology and Audiology Courses

SPAU 3301 Communication Disorders (3 semester hours) Overview of the field of communication disorders with emphasis on speech-language pathology and audiology as a profession; state and national certification requirements; professional ethics; definition, identification, and classification of disorders of hearing, speech, language, cognition and swallowing. (3-0) Y

SPAU 3303 Normal Language Development (3 semester hours) The development of language and communication, including phonology, syntax, semantics, pragmatics, and literacy. (Same as CLDP 3303) (3-0) Y

SPAU 3304 Communication Sciences (3 semester hours) Fundamentals of speech and hearing science: introductory acoustics, basic auditory phenomena, and acoustic aspects of speech. (3-0) Y

SPAU 3340 Articulation Disorders (3 semester hours) Etiology, symptomatology, evaluation, and treatment of articulation disorders. (3-0) Y

SPAU 3341 Audiology (3 semester hours) Clinical application and interpretation in audiology. Emphasis on instrumentation and calibration considerations for air and bone conduction test, speech audiometry, cerumen management, infection control and basic masking principles. Prerequisites: SPAU 3304 and 3344, or consent of instructor. (3-0) Y

SPAU 3343 Phonetics (3 semester hours) The study of speech sounds. Phonetic transcription and description of articulatory, acoustic, and linguistic properties of speech. (3-0) Y

SPAU 3344 Anatomy and Physiology of Speech and Hearing (3 semester hours) Study of anatomic and physiologic mechanisms underlying speech: respiration, phonation, and articulation. Overview of the peripheral auditory system. (Same as NSC 3344) (3-0) Y
SPAU 3345 Neural Basis of Communication (3 semester hours) Organization and function of cortical and subcortical structures that underlie speech, language and hearing. Special consideration of structures and pathways typically affected in neurogenic disorders of communication. (Same as NSC 3345) (3-0) Y

SPAU 3388 Clinical Observation in Speech-Language Pathology (3 semester hours) Guided observation and study of assessment procedures and intervention strategies used with individuals who have communication disorders. Must take on a Credit/No Credit basis. (3-0) S

SPAU 3390 Clinical Practicum in Speech-Language Pathology (3 semester hours) Guided observation and supervised participation in evaluation and therapeutic management of individuals with communication disorders. Weekly clinical conference required. Must be taken on a Credit/No Credit basis. May be repeated for credit. Pre- or corequisites: consent of instructor, SPAU 3303, 3340 or 4308, and 3343. (3-0) S

SPAU 4308 Language Disorders in Children (3 semester hours) Language impairment in children, including etiology, characteristics, and treatment procedures, with special emphasis on factors that interfere with normal development of language skills. Prerequisite: CLDP/SPAU 3303 or consent of instructor. (Same as CLDP 4308) (3-0) Y

SPAU 4325 Exceptional Children (3 semester hours) Terminology and classification related to the education of exceptional populations. Special consideration of theoretical research, legal and humanistic issues, types of learning problems, physical and mental disabilities, teaching and assessment strategies, and services available to special learners. Prerequisite: CLDP/PSY 3310, 3339 or 4334. (Same as CLDP/PSY 3342) (3-0) Y

SPAU 4342 Assessment Procedures in Speech-Language Pathology (3 semester hours) Principles and procedures in the diagnosis of communication disorders in preschool- and school-aged children and adults. A blend of philosophical issues with practical clinical methodology. Emphasis on application of diagnostic information to rehabilitation planning and techniques. Professional report writing skills included. Prerequisite: SPAU 3301 or consent of instructor. (3-0) Y

SPAU 4375 Honors Seminar (3 semester hours) A course for students who conduct undergraduate thesis research in the School of Behavioral and Brain Sciences. The seminar explores the different types of thesis research, current research opportunities in the school, and appropriate techniques for writing the thesis proposal and final thesis report. Broader issues of professional development are also explored. Permission of Associate Dean required. This course is required for all students seeking School Honors (minimum GPA of 3.40 & 30 hours at UTD). This course is usually offered only in the spring semester. (Same as CGS 4375, CLDP 4375, NSC 4375, and PSY 4375) (3-0) Y

SPAU 4393 Language in Culture and Society (3 semester hours) Influence of languages on nonlinguistic aspects of culture and society. Topics include patterns of communication, speech community, communication and social structure, varieties of language, and the analysis of communicative competence and communicative performance. (Same as PSY 4393) (3-0) Y

SPAU 4394 Multicultural Aspects of Communication Disorders (3 semester hours) Therapeutic management of foreign dialect, language differences, and the effects of cultural diversity upon learning. Needs of multicultural populations within the public schools will also be addressed. (3-0) Y

SPAU 4395 Issues in the Management of Persons with Hearing Impairment (3 semester hours) Assessment of hearing disorders, individual and group amplification, assistive listening devices, auditory and visual speech recognition, communication strategies, and service delivery to adults and children with hearing loss. (3-0) T

Special Topics
Topics under the following course number vary from semester to semester. The class schedule for the current semester will list the special topic that will be offered.

SPAU 4V90 Special Topics in Speech-Language Pathology and Audiology (1-6 semester hours) May be repeated for credit as topics vary (9 hours maximum). (Same as CGS 4V90, CLDP 4V90, NSC 4V90, and PSY 4V90) (1-6)-0 R

Independent Study
The following independent study courses are advanced individualized projects to be arranged with a supervising professor. Open only to qualified students by consent of instructor. Students must contact professor and design a contract for study prior to enrollment. Permission forms are available in the Associate Dean’s office. Student may enroll in no more than a total of 6 semester credit hours of independent study courses during one semester and a maximum of 20 percent of total hours undertaken at U.T. Dallas or 12 semester credit hours, whichever is smaller.
SPAU 4396 Internship (3 semester hours) Students earn course credit for field experience in an applied setting. Requires working at least 8 hours per week at an approved community agency or business of the student’s choice. Students keep daily job diaries, attend one class meeting per month, and write brief papers relative to their experiences. Open to students in good academic standing with a GPA of at least 2.50 who have reached junior or senior standing (more than 53 hours). Apply for placements on the BBS website. Graded Credit/No Credit only. (Same as CGS 4394, CLDP 4394, NSC 4394, and PSY 4394) (3-0) S

SPAU 4397 Honors Thesis (3 semester hours) An independent study in which the student writes an honors thesis under faculty supervision. Permission of instructor and Associate Dean required. (3-0) S

SPAU 4V96 Teaching Internship (1-4 semester hours) Students work individual with faculty member in preparing and presenting course materials and tutoring students. Must have completed the relevant course with a grade of at least B. Permission of the instructor and Associate Dean required. Taken on a Credit/No Credit basis. Can be repeated for a total of 6 semester hours. (1-4-0) S

SPAU 4V99 Individual Study (1-3 semester hours) Student studies advanced topics under weekly faculty direction and writes a paper turned in to the Associate Dean. Topics may vary. Graded Credit/No Credit only. May be repeated for credit up to 6 hours total. (1-3-0) S

Statistics Course Descriptions

STAT 1342 (MATH 1342) Statistical Decision Making (3 semester hours) Principles of quantitative decision making: summarizing data, modeling uncertainty, loss functions, probability, conditional probability, random variables. Introduction to statistics: estimation, confidence intervals, hypothesis testing, regression. Introduction to statistical packages. Cannot be used to satisfy degree requirements for majors in the School of Engineering and Computer Science, or major requirements in the Schools of Management or Natural Sciences and Mathematics. Prerequisite: MATH 1306, MATH 1314 or equivalent. (3-0) S

STAT 3103 Statistical Computer Packages (1 semester hour) An introduction to the use of statistics packages, such as SAS, BMD, SPSS, Minitab, and S, for the analysis of data. Based primarily on self-study materials. Cannot be used to satisfy degree requirements for mathematical science majors. Prerequisite: one semester of statistics. (1-0) S

STAT 3332 Statistics for Life Sciences (3 semester hours) Graphs, histograms, mean, median, standard deviation, Chebyshev’s inequality, standardized scores, simple linear regression and correlation; basic rules of Probability, Bayes theorem, Normal; t, χ², F, binomial and Poisson distributions; point estimation; hypothesis tests and confidence intervals for means, proportions regression coefficients, and correlation; one way ANOVA; contingency tables. Applications in life sciences will be emphasized throughout the course. Cannot be used by mathematical sciences, engineering, or computer science majors to satisfy degree requirements. Prerequisite: MATH 1325 or equivalent. (3-0) Y

STAT 3355 Data Analysis for Statisticians and Actuaries (3 semester hours) Methods of data analysis used in different areas of Statistics and Actuarial Science. Sampling, fitting and testing models, regression, and comparison of populations. A statistical computer package will be used. Prerequisite: MATH 2419. (3-0) T

STAT 3360 Probability and Statistics for Management and Economics (3 semester hours) Probability theory including independence, conditioning, density functions, frequently used families of distributions, random variables, expectation, moments, and the central limit theorem; statistical inference including sampling, estimation, hypothesis testing, and regression. Cannot be used by mathematical sciences, engineering, or computer science majors to satisfy degree requirements. Prerequisite: MATH 1326. (3-0) S

STAT 4351 Probability (3 semester hours) Probability models, random variables, expectation, special distributions, and the central limit theorem. The theory is illustrated by numerous examples. Prerequisite: MATH 2451. (3-0) T

STAT 4352 Mathematical Statistics (3 semester hours) Theory and methods of statistical inference. Sampling, estimation, hypothesis testing, analysis of variance, and regression with examples from the physical, social, and management sciences. Prerequisite: STAT 4351 or equivalent. (3-0) T

STAT 4372 Actuarial Science (3 semester hours) Probability models and statistical methods used in insurance business. Typical loss distributions including Pareto, Weibull, lognormal, loggamma, discrete and continuous mixtures. Effect of coverage modifications, and clustering in modeling. Estimation by simulation. Prerequisite: STAT 4351. (3-0) T

STAT 4382 Stochastic Processes (3 semester hours) Stochastic models including Markov chains, random walks, Poisson processes, renewal processes, and an introduction to time series and forecasting. Prerequisite: STAT 4351 or equivalent. (3-0) T

STAT 4V02 Independent Study in Statistics (1-6 semester hours) Independent study under a faculty member’s direction. May be repeated for credit as topics vary (9 hours maximum). Prerequisite: Student must obtain approval from participating
mathematical sciences faculty member and the undergraduate advisor. Can satisfy Communication elective (3 hours) if it has a major writing/report component. ([1-6] -0) S

STAT 4V97 Undergraduate Topics in Statistics (1-9 semester hours) Subject matter will vary from semester to semester. May be repeated for credit (9 hours maximum). ([1-9]-0) S

Telecommunications Engineering Course Descriptions

TE 1102 (ENGR 1102) Introduction to Experimental Techniques (1 semester hour) EE fundamentals laboratory that stresses laboratory procedures; learning use of common laboratory equipment such as power supplies, multimeters, signal generators, and oscilloscopes; understanding the assembly of electronic circuits by putting together and testing two simple printed circuit boards; making measurements; familiarization with simple DC resistor circuits; Ohm’s law; analyzing AC signals, including frequency, period, amplitude, and rms value; inductors, capacitors and DC transients; measuring phase shift in an AC circuit due to an inductor or capacitor; and basics of laboratory report writing. (Same as CE/EE 1102) (0-1) S

TE 3101 Electrical Network Analysis Laboratory (1 semester hour) Laboratory to accompany EE 3301. Design, assembly and testing of linear electrical networks and systems. Use of computers to control electrical equipment and acquire data. Prerequisite: EE/TE 1102. Corequisite: CE/EE/TE 3301. (Same as CE/EE 3101) (0-1) S

TE 3102 Signals and Systems Laboratory (1 semester hour) Laboratory based on MATLAB and LabVIEW to provide implementation experience on topics covered in TE 3302. Laboratory experiments cover linear time-invariant systems, convolution, Fourier series, continuous Fourier transform, sampling, discrete Fourier transform, analog and digital filtering. Each lab is followed by a design application. Corequisite: CE/EE/TE 3302. Pre- or corequisite: ECS 3390. (Same as CE/EE 3102) (0-1) S

TE 3301 Electrical Network Analysis (3 semester hours) Analysis and design of RC, RL, and RLC electrical networks. Sinusoidal steady state analysis of passive networks using phasor representation; mesh and nodal analyses. Introduction to the concept of impulse response and frequency analysis using the Laplace transform. Prerequisites: MATH 2420 and PHYS 2326. Corequisite: CE/EE/TE 3101. (Same as CE/EE 3301) (3-0) Y

TE 3302 Signals and Systems (3 semester hours) Introduces the fundamentals of continuous and discrete-time signal processing. Linear system analysis including convolution and impulse response, Fourier series, Fourier transform and applications, discrete-time signal analysis, sampling and z-transform. Prerequisite: CE/EE 3300. Corequisite: CE/EE/TE 3102. (Same as CE/EE 3302) (3-0) Y

TE 3307 Discrete Mathematics (3 semester hours) Principles of counting. Boolean operations. Sets, relations, functions, and partial orders. Recurrence relations. Graph theory. Students cannot get credit for both CE/TE 3307 and CS 2305 or CS 3305. Prerequisite: MATH 2417. (Same as CE 3307) (3-0) Y

TE 3341 Probability Theory and Statistics (3 semester hours) Axioms of probability, conditional probability, Bayes theorem, random variables, probability density/mass function (pdf/pmf), cumulative distribution function, expected value, functions of random variables, joint, conditional and marginal pdfs/pmf for multiple random variables, moments, central limit theorem, elementary statistics, empirical distribution. Students cannot get credit for both CS/SE 3341 and CE/EE/TE 3341. Prerequisite: MATH 2419. Recommended corequisite: MATH 2420. (Same as CE/EE/MECH 3341) (3-0) Y

TE 3346 Computer Algorithms and Data Structures (3 semester hours) Basic data structures such as arrays, stacks, queues, lists, trees. Algorithmic complexity. Sorting and search techniques. Fundamental graph algorithms. Students cannot get credit for both CS/SE 3345 and CE/TE 3346. Prerequisites: CE/CS 2336 and CE/TE 3307. Pre- or corequisite: CE/EE/TE 3341. (Same as CE 3346) (3-0) S

TE 3434 Numerical Methods in Engineering (3 semester hours) Computer arithmetic and error analysis. Solution of linear equations, roots of polynomial equations, interpolation and approximation, numerical differentiation and integration, solution of ordinary differential equations. Emphasis on engineering applications and numerical software. Students cannot get credit for both CS/MATH 4334 and CE/EE/TE 4334. Prerequisites: CE/EE 2300, CE/EE 3300, and knowledge of a high level programming language. (Same as CE/EE 4334) (3-0) Y

TE 4348 Operating Systems Concepts (3 semester hours) An introduction to fundamental concepts in operating systems, their design, implementation, and usage. Topics include: process management, main memory management, virtual memory, I/O and device drivers, file systems, secondary storage management, introduction to critical sections and deadlocks. Prerequisites: CS/SE 3340 or CS/SE 4340 or CE/EE 4304, CS/SE 3345 or CE/TE 3346, and a working knowledge of C and UNIX. (Same as CE/CS/SE 4348) (3-0) S
TE 4365 Introduction to Wireless Communication (3 semester hours) Introduction to the basic system concepts of cellular telephony. Mobile standards, mobile system architecture, design, performance and operation. Voice digitization and modulation techniques; PCS technologies. Prerequisite: EE 3350. (Same as EE 4365) (3-0) Y

TE 4367 Telecommunication Networks (3 semester hours) Trunking and queuing, switching technologies: voice, data, video, circuit switching and packet switching, transmission technologies and protocols, transmission media - copper, fiber, microwave, satellite, protocols - bipolar formats, digital hierarchy, optical hierarchy, synchronization, advanced switching protocols and architectures; frame relay, ATM, HDTV, SONET. Prerequisite or Corequisite: EE 3350. (Same as EE 4367) (3-0) Y

TE 4388 Senior Design Project I (3 semester hours) First of two sequential semesters devoted to a team project that engages students in the full engineering design process. The goal of senior design projects is to prepare the student to run/participate in engineering projects related to an appropriate industry. Thus, all project teams are to follow standard industrial practices and methods. Teams must carry the engineering project to completion, examining real world constraints, following applicable industrial and business standards. Such constraints may include but are not limited to: economic, environmental, industrial standards, team time/resource management and cross-disciplinary/departmental result integration. (Students are encouraged to work in teams that include collaborative design interaction, but may work on individual projects as well, provided there is a collaboration component. Additionally, cross disciplinary/departmental teams are encouraged but not required.) In Senior Design I, project proposals will be written, reviewed and approved. Initial designs will be completed and corresponding constraints will be determined. All students will participate in a public oral presentation following departmental approved guidelines at a departmental approved time and location. Teams will also submit a written end of semester progress report and documented team communication (complete sets of weekly reports and/or log books) following guidelines approved by the faculty. Students must have completed ECS 3390, and one of the following prerequisite sequences: (CE 3311, CE 3200, CE 3346, and CE 3354), or (EE 3300, EE 3302, EE 3311, and EE 3320), or (EE 3300, TE 3302, and TE 3346; pre- or corequisite EE 3350). (Same as CE/EE/TE 4388) (3-0) S

TE 4389 Senior Design Project II (3 semester hours) Continuation of the Senior Design project begun in the previous semester. In Senior Design II, projects based on approved project proposals will be completed. All limitations of the design will be determined and addressed. All students will participate in a public oral presentation following faculty-approved guidelines at a faculty-approved time and location. Teams will also submit a written final report and documented team communication (complete sets of weekly reports and/or log books) following faculty-approved guidelines. Prerequisite: CE/EE/TE 4388. (Same as CE/EE 4389) (3-0) S

TE 4390 Computer Networks (3 semester hours) The design and analysis of computer networks. Topics include the ISO reference model, transmission media, medium-access protocols, LANs, data link protocols, routing, congestion control, internetworking, and connection management. Students cannot get credit for both CE/CS/TE 4390 and EE 4390. Prerequisite: CE/TE 3346 or CS/SE 3345. (Same as CE/CS 4390) (3-0) S

TE 4V95 Undergraduate Topics in Telecommunications Engineering (1-9 semester hours) Subject matter will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). ([1-9]-0) R

TE 4V98 Undergraduate Research in Telecommunications Engineering (1-9 semester hours) Topics will vary from semester to semester. May be repeated for credit (9 hours maximum). This course may be used as an honors course. ([1-9]-0) R
Developmental Courses

Developmental courses cannot be used for degree credit.

**DMTH OV93 Fundamentals of Mathematics and Elementary Algebra (1-3 semester hours)** A mathematics course that offers students the opportunity to develop proficiency in solving problems involving integers, rational numbers (including ratios, percentages, and proportions), and geometric figures; interpreting and constructing tables, charts and graphs; forming equivalent algebraic expressions using various appropriate algebraic models that involve linear equations, linear systems, or linear inequalities. May be repeated. This developmental course cannot be used for degree credit. ([1-3]-0) S

**DRDG OV92 Reading for Success (1-3 semester hours)** A reading course that offers students the opportunity to develop proficiency in reading comprehension, vocabulary development, critical reasoning, study skills, and other reading skills necessary for success in academic and career advancement. The course emphasizes learning how to learn and includes reading/learning experiences designed to strengthen the total educational background of each student. This developmental course cannot be used for degree credit. ([1-3]-0)

**DRDG OV94 Study Skills (1 semester hour)** In this introductory, mentor-based course, students are guided through developing study skills to improve academic and work performance based on their learning styles. They are provided several application opportunities based on self-assessments in topics such as time management, memory, reading, writing, note taking, critical thinking, test taking and researching. May be repeated. This developmental course cannot be used for degree credit. ([1-3]-0) S

**DWTG OV91 Writing for Success (1-3 semester hours)** A writing course that offers students the opportunity to develop proficiency in the inventing, drafting, revising and editing skills necessary for writing multiparagraph papers. Topics will include sentence structure, grammar, paragraph development, usage and mechanics. The course is writing-intensive, and students will have the opportunity to do class assignments on a word processor. May be repeated. This developmental course cannot be used for degree credit. ([1-3]-0) S
Interdisciplinary Studies

While the processes of education rest upon the foundation of clearly defined disciplines, there are many problems and issues that require a broader approach. Hence, The University of Texas at Dallas is committed to developing interdisciplinary studies. Some of these problems arise initially out of the traditional disciplines but cannot be solved by exclusive reference to them. For example, social historians have found it imperative to emancipate themselves from the methods of the traditional historian and to enlist the support of the social anthropologist, the sociologist, and the art historian.

Other problems and ideas, by their very nature, involve the integrated activity of scholars in disparate fields, as in the case of issues posed by contemporary medical ethics, which require the integrated perspectives of the moral philosopher, the psychologist, the sociologist, and the physician. Furthermore, in some instances the processes of interdisciplinary fusion result in the emergence of new disciplines, as in the case of molecular biology, which arose largely out of the work of physicists and chemists working in the field of biology. In other words, from whatever perspective it is viewed, interdisciplinaryity is an intellectually enriching and potentially creative process which can be an important component of the educational experience at The University of Texas at Dallas.

The Interdisciplinary Studies courses which follow are sponsored by particular schools but are open to all students at the University.

Interdisciplinary Studies Course Descriptions

BIS 2V90 Topics in Interdisciplinary Studies (1-6 semester hours) May be repeated for credit as topics vary. (6 hours maximum). ([1-6]-0) R

BIS 3320 The Nature of Intellectual Inquiry (3 semester hours) Core course designed to enhance the student’s critical thinking and reasoning in order to understand and utilize the methodologies of scholarly pursuits. To be taken during the student’s first twelve hours as a junior in the Interdisciplinary Studies program. (There is an honors section of this course for those interested in honors in the major.) May not be taken on a Credit/No Credit basis. (3-0) S

BIS 3390 Theory and Practice of Group Motivation and Leadership (3 semester hours) An elective course designed to provide students with a basic understanding of the theoretical knowledge and skills needed to lead and motivate groups engaged in personal or professional transitions. Includes supervised and paraprofessional experience. Prerequisite: Permission of instructor. May be repeated for credit (6 hours maximum). (3-0) Y

BIS 3V03 Educational Issues (1-6 semester hours) This course is designed to allow students to study and analyze various educational issues under the direct supervision of a faculty member. Students must have the prior approval from the faculty member willing to supervise the course and the permission of the Associate Dean of the School of General Studies. Topics may vary. May be repeated for credit (6 hours maximum). ([1-6]-0) R

BIS 4303 Senior Honors in Interdisciplinary Studies (3 semester hours) Required for graduation magna cum laude and summa cum laude. See requirements for Graduation with Latin Honors in this catalog. Consent of the instructor and Associate Dean of General Studies is required. (3-0) S

BIS 4305 Learning Studies Practicum (3 semester hours) Supervised instructional experiences with school-age students. Focus is on enrichment activities that meet the learning needs of individual students. Consent of the faculty member is required. (3-0) Y

BIS 4310 Co-op Education (3 semester hours) Students completing this course will integrate academic learning with their co-op work experience. To attain this goal, students will keep a journal of their workplace experience, maintain contact with the instructor, and prepare a written report that focuses on the accomplishments and insights gained through their co-op experience. Topics may vary. May be repeated for credit (6 hours maximum) (3-0) T

BIS 4V01 Special Topics (1-3 semester hours) Subject matter will vary from semester to semester. May be repeated for credit as topics vary (6 hours maximum). ([1-3]-0) R

BIS 4V02 Independent Study (1-9 semester hours) Independent study under a faculty member’s direction. An Independent Study course may be used in the Interdisciplinary Studies degree plan wherever appropriate. An Independent Study course involves an individual contract between the student and a faculty member, specifying what requirements the student will meet. This usually involves some combination of reading, research, papers, examinations, and meetings with the faculty member. To undertake an Independent Study, the student must arrange with an appropriate faculty member for supervision of a particular topic. For written papers, 10 pages are required for each hour of credit. Consent of the faculty member is required. May be repeated for credit (9 hours maximum) ([1-9]-0) S
BIS 4V04 Internship (1-6 semester hours) Students undertake a new learning experience at a faculty-supervised work situation in business, government, or social service agency, arts institution, or other setting appropriate to the student’s concentration. Sites may be local, out of state, or abroad. An internship provides exposure to a professional working environment, application of theory to working realities, and an opportunity to test skills and clarify goals in a specific field. Experience gained may also serve as a work credential after graduation. Course requirements include writing a journal and research paper connecting theory to practice. This course is open to all majors at UTD. May be repeated for credit (6 hours maximum) (1-6-0 S

School of Arts and Humanities

ISAH 3130 Careers for A&H Majors (1 semester hour) This course provides students with assistance in exploring careers in the arts and humanities and in making effective career decisions. (1-0) R

ISAH 3131 Careers for ATEC Majors (1 semester hour) This course provides students with assistance in exploring careers in art and technology and in making effective career decisions. (1-0) R

ISAH 4350 Internship (3 semester hours) Students undertake a new learning experience at a supervised work situation related to their academic interests. An internship provides exposure to a professional working environment, application of theory to working realities, and an opportunity to test skills and clarify goals. Course requirements include formal and reflective writing. May be repeated for credit (6 hours maximum). (3-0) R

ISAH 4V88 Special Interdisciplinary Topics in the Arts and Humanities (1-6 semester hours) Subject matter will vary from semester to semester. May be repeated for credit (9 hours maximum). (1-6-0) R

School of Behavioral and Brain Sciences

ISHD 3343 Children in a Changing World (3 semester hours) Issues relevant to childhood in the 20th century. Topics include day care, divorce, parenting styles, and parental leave. The influence of social policy, socioeconomic factors, and family structure on childrearing will be discussed. (3-0) Y

ISHD 4365 Language in Culture and Society (3 semester hours) An investigation of the influence of language on nonlinguistic aspects of culture and society. Topics will include patterns of communication, speech community, communication and social structure, varieties of language, and the analysis of communicative competence and communicative performance. (3-0) R

School of Economic, Political, and Policy Sciences

ISSS 3111 Careers in the Social Sciences (1 semester hour) This one-credit course is designed to provide social sciences majors and those interested in the social sciences with information and skills that will help them select and pursue a career in their major or a related field. (1-0) R

ISSS 3323 Geographic Information Systems for Social Scientists (3 semester hour) An introduction to Geographic Information Systems with a focus on GIS methods and procedures used in the Social Sciences. Cartographic procedures for displaying the results of social scientific research are presented. Specific GIS methods are covered for use in several different applications areas, including political geography, transportation studies, land use for cadastral and zoning applications, and spatial statistics in the context of criminology. Industry standard GIS software tools are used to apply these methods. (3-0) R

ISSS 3349 World Resources and Development (3 semester hours) Analysis of resource mobilization, technological changes and economic development from a multidisciplinary perspective. Primary focus on the problems of the less-developed countries. Topics include: technology transfer, industrialization strategy, education policy, population growth, nutrition and foreign aid. (3-0) R

ISSS 4320 Social Entrepreneurship (3 semester hours) This course is about providing those interested in entrepreneurial ventures with primarily a social focus with the skills and knowledge necessary to accomplish their goals. The course will be seminar style and require a practicum. Topics to be included are entrepreneurship in the non-profit sector, entrepreneurship in political campaigns, new public management and the role of entrepreneurship in government and public services, urban planning, and geographical information sciences as a tool all entrepreneurs can use in the creation of new opportunities. (3-0) R

ISSS 4358 National and International Security (3 semester hours) Investigates problems associated with national and international security in the post-cold war world. Includes analysis of the use of military force, nuclear arms, terrorism, international treaties, and the economic dimensions to national security. (3-0) R

ISSS 4377 Alternative Approaches to National Security (3 semester hours) There is a pressing need to reconsider how nations can best achieve security in the face of drastic changes in the international arena in the last decades of the twentieth
century. The Cold War has ended, the Soviet Union has collapsed, yet regional conflicts abound, ethnic antagonisms threaten the peace, and international terrorism is still a real danger. At the same time, important progress has been made in arms reduction, international cooperation, and the speed of democracy. In the light of these changes, this course explores a variety of alternatives to the traditional threat or use of massive military force as a means for achieving national and global security. (3-0) R

**ISSS 4V86 Special Interdisciplinary Topics in the Social Sciences** *(1-6 semester hours)* Subject matter will vary from semester to semester. May be repeated for credit (9 hours maximum). ([1-6]-0) R

**ISSS 4V96 CV Honors Project** *(1-3 semester hours)* Independent study to produce a senior project under the direction of the Collegium V Honors Director. Credit/No Credit. ([1-3]-0) R

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**Erik Jonsson School of Engineering and Computer Science**

**ISEC 4102 Computer Art Laboratory** *(1 semester hour)* This course involves the creation and use of algorithms for art on microcomputers. Will not satisfy core requirement in Natural Sciences. Corequisite: ISEC 4201 The Computer and the Artist. (0-2) R

**ISEC 4201 The Computer and the Artist** *(2 semester hours)* This course explores the problems, tools, and opportunities presented to the artist by the birth of this new medium. From the analytic aspects of computer graphics to the aesthetics of interactive design, the wide range of extant techniques foreshadows the richness of future computer art. Will not satisfy core requirement in Natural Sciences. Corequisite: ISEC 4102 Computer Art Laboratory. (2-0) R


**ISEC 4V87 Special Interdisciplinary Topics in Engineering or Computer Science** *(1-6 semester hours)* Subject matter will vary from semester to semester. May be repeated for credit as topics vary (9 hours maximum). ([1-6]-0) R

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**School of General Studies**

**ISGS 1100 Career Explorations for the Health Professions** *(1 semester hour)* This course is designed to provide first year Pre-Health students with information and skills that will help them identify if a career in the health professions is appropriate for them. It will educate students about the range of careers available in healthcare and prepare them for seeking health related opportunities and application to professional school programs. Students must register for this course through the Health Professions Advising Center in JO 4.800. Prerequisite: RHET 1101 with a grade of B- or better. (1-0) Y

**ISGS 3100 Pre-Health Professional Development** *(1 semester hour)* This course is designed for traditional students who are committed to a career in healthcare and have not had the life opportunities to develop the skills taught in this class. It helps prepare students for the Medical/Dental school application process and to increase the likelihood of successful admission. Students must register for this course through the Health Professions Advising Center in JO 4.800. (1-0) Y

**ISGS 3305 Humans: Our Place in Nature** *(3 semester hours)* The history of the human lineage is a complicated but fascinating combination of biological and cultural changes. (3-0) Y

**ISGS 3306 Human Female: Biology and Culture** *(3 semester hours)* This course takes a life cycle approach to the major biological events in a woman's life, and the various cultural observances or lack thereof, which accompany these changes. (3-0) Y

**ISGS 3308 Bones, Bodies, and Disease** *(3 semester hours)* An introduction to the wealth of knowledge that can be ascertained through an analysis of skeletal and mummified remains. (3-0) Y

**ISGS 3312 Women in Management** *(3 semester hours)* Earnings differences, employment policies, and other critical issues affecting the status of women in managerial and professional positions. (3-0) S

**ISGS 3335 United States and East Asia** *(3 semester hours)* This course examines the interaction between the United States and East Asia. Topics include sociocultural differences, conflicts in political ideals, economic relations, and trans-Pacific diplomacy. The course highlights the spread of American culture and the rise of East Asia's economic power. (3-0) Y

**ISGS 3338 Native American Cultures** *(3 semester hours)* This course provides an overview of the Indian, Eskimo, and Aleuts of North America from first contacts with the European world to the present. Native Americans will be viewed from an interdisciplinary and culture area perspective. Topics discussed include pan-Native American ideologies and problems. (3-0) Y
ISGS 4309 Diversity and Globalization (3 semester hours) This course studies the meanings, processes, and impacts of globalization. It highlights sensitivity to global diversity and examines how global companies cope with a wide array of political/legal forces and transform social/cultural differences into competitive advantages. Topics include conflict resolution in business diplomacy and strategies of managing global diversity. (3-0) Y

ISGS 4V89 Special Topics in Interdisciplinary Studies (1-6 semester hours) Subject matter will vary from semester to semester. May be repeated for credit (6 hours maximum). ([1-6]-0) R

School of Natural Sciences and Mathematics


ISNS 3332 Future Energy Resources (3 semester hours) Major Energy Consuming Sectors: Residential, Industrial, Transportation and Electric Energy Generating Sectors. Present major energy resources: oil, gas, coal, hydroelectric, and nuclear. Energy mix used in consuming sectors. Imported energy. Domestic and world resources in conventional energies. Future energy resources: nuclear fission (conventional and breeder reactors), fusion reactors, technology and safety aspects, nuclear proliferation and terrorism, nuclear waste disposal, solar energy, solar heating and cooling. Non-conventional energy resources. Major problems of energy transportation. An energy mix for the future. Possible scenarios for a U.S. energy plan. Major fields of research and development. (3-0) Y

ISNS 3333 Nuclear Safety and Terrorism (3 semester hours) Practically all scientists, politicians, statesmen and other leaders of our society agree that the ultimate most tragic danger confronting our whole civilization is nuclear terrorism. the invisible terrorist with a shielded (invisible) nuclear weapon. The physical principles of nuclear weapons, access to them, possibility to smuggle them into the US, nuclear proliferation, the possibility of escalating a nuclear attack into full scale nuclear war, and the technical possibilities to reduce this terrible danger are discussed. (3-0) Y

ISNS 3359 Earthquakes and Volcanoes (3 semester hours) Earthquakes and volcanoes appear capricious and devastating in human terms, but they are also a regular part of geological history. This course will integrate current geological thinking with elements of statistics, physics, chemistry, human history, sociology, psychology, and religion to develop an understanding and to provide pragmatic strategies for living with these events. (3-0) Y

ISNS 3367 The Oceans (3 semester hours) Physical, chemical, biological, and geological aspects of oceanography. Description and origin of features on sea floor; evolution of ocean basins; chemistry of sea water; influence of oceans on weather and climate; formation of waves, tides, currents; factors affecting biological productivity; economic resources and environmental problems. Can only receive credit for one of ISNS 3367 and GEOS 3401. (3-0) S

ISNS 3368 Weather and Climate (3 semester hours) An overview of the fields of meteorology and climatology. The approach is scientific yet nonmathematical, and students will be exposed to a wide spectrum of ideas from folklore, history, law, economics, and environmental issues. (3-0) S

ISNS 3371 The Phenomena of Nature: Forces, Gases, Motion, Heat, Light and Electricity (3 semester hours) The purpose of the course is to cultivate in students an intuitive perception of the nature of observable physical reality through the presentation and analysis of striking experimental demonstrations. No substantial prior training in science is assumed, but students with a background in science may profit from this course. There will be considerable reference to the historical growth of scientific knowledge and to the aesthetic quality of the explanations offered by science. (3-0) Y

ISNS 3373 Our Nearest Neighbors in the Sky (3 semester hours) A description of the tools and principles the astronomer and space scientist use in exploration of the solar systems; the earth, moon, the sun, planets, asteroids, meteors, and comets; the origin of the solar system; classroom demonstrations, multimedia presentations, and telescope observations. NATS 4173 may be taken with this course to satisfy a General Education laboratory science requirement. (3-0) Y
Physical Instruction

The University of Texas at Dallas program in Physical Instruction is designed to provide experiences in a variety of sport, exercise, and recreational activities. The courses are designed to offer opportunity for physical exercise, increase skill level in specific activities, and as a source of recreation and enjoyment. The program is designed to meet student needs and interests, is voluntary, and is coeducational. The emphasis of the program is in the lifetime sports areas. Any PHIN course may be taken up to three times for credit. PHIN courses may not be taken on a Credit/No Credit basis. A maximum of three PHIN credits may be applied toward graduation.

Physical Instruction Course Descriptions

PHIN 1100 Sports Conditioning  (1 semester hour) This course will emphasize cardio pulmonary endurance, muscular strength and endurance, flexibility, speed, agility, quickness, and balance. A variety of activities, drills, and sports specific techniques will be included. May be repeated for credit (3 hours maximum). (1-0) R

PHIN 1102 Racquetball  (1 semester hour) Emphasis on acquiring enjoyment, knowledge, and skills in racquetball. Instruction will vary according to individual ability. May be repeated for credit (3 hours maximum). (1-0) S

PHIN 1103 Beginning Tennis  (1 semester hour) Designed for the beginning player; development of basic strokes, rules of play, scoring. (1-0) Y

PHIN 1104 Intermediate Tennis  (1 semester hour) Designed for the player who has mastered the basic skills; utilization of strategy and tactics in game playing. May be repeated for credit (3 hours maximum). (1-0) Y

PHIN 1106 Aerobics  (1 semester hour) Emphasis on the development of cardiovascular endurance by utilizing choreographed routines which may combine basic dance pattern with activities such as walking, jogging, and jumping. May be repeated for credit (3 hours maximum). (1-0) S

PHIN 1107 Beginning Basketball  (1 semester hour) Instruction in basic basketball skills, including rules, strategies, and competitive activities. May be repeated for credit (3 hours maximum). (1-0) Y

PHIN 1108 Beginning Volleyball  (1 semester hour) Instruction in basic volleyball skills, including rules, strategies, and competitive activities. May be repeated for credit (3 hours maximum). (1-0) Y

PHIN 1111 Special Topics in Physical Instruction  (1 semester hour) Subject matter will vary from semester to semester. May be repeated for credit (3 hours maximum). (1-0) R

PHIN 1120 Yoga  (1 semester hour) Instruction in the basic asanas and their use in building and maintaining muscle tone throughout the body. May be repeated for credit (3 hours maximum). (1-0) Y

PHIN 1121 Martial Arts and Self-Defense  (1 semester hour) Instruction in basic self-defense techniques. Emphasis on judo and karate for self-defense and physical exercise. May be repeated for credit (3 hours maximum). (1-0) Y

PHIN 1122 Physical Fitness and Conditioning  (1 semester hour) Instruction and participation in weight training and conditioning techniques. Designed to improve muscle tone, flexibility, and endurance. May be repeated for credit (3 hours maximum). (1-0) Y

PHIN 1129 Beginning Swimming  (1 semester hour) Instruction in basic swimming including stroke development, water safety, and fitness. May be repeated for credit (3 hours maximum). (1-0) R

PHIN 1130 Intermediate Swimming  (1 semester hour) Instruction in advanced swimming including stroke development, water safety, and fitness. May be repeated for credit (3 hours maximum). (1-0) S

PHIN 2102 Racquetball II  (1 semester hour) This course will emphasize the continued development and increase in skills necessary for the game of racquetball. Skill development will continue in strokes, serving, court position, rules and strategies. May be repeated for credit (3 hours maximum). (1-0) Y

PHIN 2120 Open Water Scuba  (1 semester hour) Learn to Scuba dive under the PADI diver-training program. This is a hands on course that will teach you in a classroom and pool environment all of the skills to receive diver certification. At the end of the course, you will demonstrate your skills at a Scuba Park near Dallas. Upon successful completion of four open water dives, you will receive a PADI Open Water Certification card. Prerequisites: You must be able to swim and tread water. Additionally, you must complete a medical questionnaire. Depending on the response to the questionnaire, you might need a medical release from a Licensed Medical Doctor prior to any in-water training. May be repeated for credit (3 hours maximum). (1-0) Y

PHIN 2150 Soccer  (1 semester hour) This course will teach understanding and demonstration of the basic skills and concepts used in the game of soccer. May be repeated for credit (3 hours maximum). (1-0) Y
**PHIN 2151 Topics in Athletics** (1 semester hour) Skill instruction in the basic fundamentals and style of playing. Emphasis on techniques, conditioning, and play patterns. By permission of instructor only. May be repeated for credit (3 hours maximum). (1-0) R

**PHIN 2152 Baseball** (1 semester hour) This course will teach understanding and demonstration of basic skills and concepts used in the game of baseball. May be repeated for credit (3 hours maximum). (1-0) R

**PHIN 2153 Cheerleading** (1 semester hour) This course is designed to develop the theory and practice of cheerleading skills. It will provide aerobic exercise. May be repeated for credit (3 hours maximum). (1-0) R

**PHIN 2154 Cross Country** (1 semester hour) This course is designed to develop the skills necessary for cross-country. Warm-up techniques, endurance training and cool-down techniques will be learned. May be repeated for credit (3 hours maximum). (1-0) R
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Appendix I

Rules, Regulations, and Statutory Requirements

A. Student Conduct and Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the U.T. Dallas publication, A to Z Guide, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the Rules and Regulations, Board of Regents, The University of Texas System, Series 50101 and in Title V, Rules on Student Services and Activities, Chapter 49 of the university's Handbook of Operating Procedures. Copies of these rules and regulations are available to students in the Office of the Dean of Students where staff are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents’ Rules, university regulations, and administrative rules. Students are subject to discipline for violating its standards of conduct whether such conduct takes place on or off campus or whether civil or criminal penalties are also imposed for such conduct.

1. Academic Dishonesty. The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one’s own work of material that is not one’s own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

2. Campus Solicitations. “Solicitations,” as defined by the Rules and Regulations of the Board of Regents of The University of Texas System, means the sale, lease, rental of any property product, merchandise, publication, or service, whether for immediate or future delivery; an oral statement or the distribution or display of printed material, merchandise or products that is designed to encourage the purchase, use or rental of any property, product, merchandise, publication, or service; the oral or written appeal or request to join an organization other than a registered student, faculty or staff organization; the receipt of or request for any gift or contribution; and/or the request to support or oppose or to vote for or against a candidate, issue, or proposition appearing on the ballot at any election pursuant to state or federal law or local ordinances. All solicitations on the U.T. Dallas campus must conform to the Regents’ Rules, copies of which are available in the offices of the President, Executive Vice President and Provost, Vice Presidents, and Deans and in numerous other administrative offices and the library.

3. Hazing. Hazing, submission to hazing, or failure to report first-hand knowledge of hazing incidents is prohibited by state law and, in addition to disciplinary actions, is punishable by criminal monetary fines and, depending on its severity and consequences, by confinement in state prison or county jail. Hazing is defined by state law 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.” Any person with knowledge that a specific hazing incident has occurred on or off campus must report the incident to the Dean of Students (SU 1.602) or call 972/883-6391.

4. Other Disciplinary Situations. Any student organization as a group is subject to disciplinary action or revocation of registration as a student organization for violation of a rule or regulation of The University of Texas System or The University of Texas at Dallas.
B. Grievance Procedures

The University of Texas at Dallas is committed to a policy of nondiscrimination on the basis of age, color, disability, gender, race, religion, sexual orientation, national origin, or veteran status in its provision of services, activities, and programs, and in its treatment of students. Students seeking further information about this policy or related complaint procedures for alleged discrimination or sexual harassment should contact the Dean of Students. The dean will follow the procedures for student grievances that are found in Title V, Rules on Student Services and Activities, Chapter 51, summarized below.

Sexual harassment is a form of sex discrimination. Such harassment is defined as unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature. Suggestions that academic or employment reprisals or rewards will follow the refusal or granting of sexual favors, also constitute sexual harassment. The full text of the University’s “Sexual Harassment Policy and Procedure” may be found in the Administrative Policies and Procedures Manual, Section D, D11-115.0.

Any student who perceives that he or she has been subject to any form of discrimination as defined above may file a written complaint with the Dean of Students using the following procedures:

1. The complaint must contain the nature of the alleged discrimination, the date on which the alleged discrimination occurred, and other appropriate information as required by the dean.
2. The dean will refer all complaints that name an employee of the university (including graduate assistants and other student employees) as the offender to the Office of Human Resources for investigation and resolution. When the nature of the complaint is discrimination on the basis of disability, the dean will refer the grievance or complaint to the ADA Coordinator who will investigate the complaint under the procedures given in the Administrative Policies and Procedures Manual, Vol. IIA, Section D, page D11-195.o, Americans With Disabilities Act Grievance Policy.
3. With the exceptions noted in subsection (2) above, the student discipline procedure outlined in Title V, Chapter 49 Student Discipline and Conduct will be utilized for complaints that name a student as an alleged offender. Such complaints will be investigated by the dean.
4. As a result of the investigation, the dean will, on the basis of the information presented, determine: a) that the charges of discrimination are without basis, b) that further investigation is required, c) that campus action shall be initiated to alleviate a discriminatory situation, or d) that a hearing will be held.

C. Academic Appeals

1. Procedures for student grievances are found in Title V, Chapter 51, Rules on Student Services and Activities, of the university’s Handbook of Operating Procedures. In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originated (hereafter called “the respondent.”) Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy to the respondent’s school dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the school dean.
   If the grievance is not resolved by the school dean’s decision, the student may make a written appeal to the dean of graduate or undergraduate studies, who will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

2. Copies of these rules and regulations are available to students in the Office of the Dean of Students where staff is available to assist students in interpreting the rules and regulations.

D. Privacy Act: Student Records

1. The student’s university record is established and maintained to provide both the student and the university with information regarding the student’s progress while enrolled at the university. Any student enrolled in the university has access to and may inspect those records relating to his or her academic progress, to the extent allowed by the Family Educational Rights and Privacy Act and the Texas Public Information Act. The record is considered to be confidential and may be released only within the limitations clearly defined by university regulations and state and federal statutes or with the student’s written permission.
2. The university may release directory information which is defined as public information and includes the student’s name, local and permanent address, telephone number, E-mail address, date and place of birth, major field of study, participation in officially recognized activities and sports, photographs, weight and height of members of athletic teams, dates of attendance, degrees, awards and honors received, the most recent educational agency or institution attended by the student, classification, and expected date of graduation. This information may be printed in various publications of the university such as the student directory, honors list, athletic programs, list of graduating students, or similar documents. Additionally, this information may be released upon request. A student may request that the university not release directory information by completing the appropriate forms during registration. The student must complete the forms each semester.

3. Student records which the university maintains include official university academic and personal records relating to scholastic, disciplinary and fiscal matters as well as records maintained by university agencies and agencies providing services sought voluntarily by students. Students may challenge the contents of educational records and request corrections to inaccurate or misleading information. Any request for correction or explanation of record contents should be presented in writing to the person in charge of the office where the record is maintained.

4. Detailed information pertaining to the content of and handling of student records is contained in Title V, Rules on Student Services and Activities of the university’s Handbook of Operating Procedures. Students wishing more information about their rights established under the Family Educational Rights and Privacy Act should contact the Office of the Dean of Students, Student Union 1.602, (972) 883-6391.

5. The Family Educational Rights and Privacy Act does not extend to research papers and theses authored by students; these documents are available to interested members of the public.

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**E. The Student-Right-To-Know and Campus Security Act**

In compliance with the Student-Right-to-Know and Campus Security Act, The University of Texas at Dallas collects specified information on campus crime statistics, campus security policies, and institutional completion or graduation rates. The university publishes an annual report of campus security policies and crime statistics and distributes copies during registration.

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**F. Use of Facilities**

Pursuant to the general authority of *Texas Education Code* Chapter 65, and the specific authority of *Texas Education Code* Chapter 51, the Board of Regents of The University of Texas System, in Series 80101-80110 of the *Rules and Regulations*, promulgates rules relating to the use of buildings, grounds, and facilities for purposes other than programs and activities related to the role and mission of the U.T. System and the component institutions.

The property, buildings, or facilities owned or controlled by the U.T. Systems or U.T. Dallas are not open for assembly, speech, or other activities as are the public streets, sidewalks, and parks. The responsibility of the Board of Regents to operate and maintain an effective and efficient system of institutions of higher education requires that the time, place, and manner of assembly, speech, and other activities on the grounds and in the buildings and facilities of the U.T. System or U.T. Dallas be regulated.

Complete copies of the regental and institutional rules and regulations are available to students in the Office of the Dean of Students where staff members are available to assist students in interpreting the rules.
Appendix II

Transfer of Lower-Division Course Credit

The following procedures are established in the Texas Administrative Code, Title 19, Chapter 4, Subchapter B, Section 4.27 of the Texas Higher Education Coordinating Board rule pertaining to transfer of lower-division course credit. The designated official at The University of Texas at Dallas to be contacted regarding a transfer dispute for a lower-division course is the Dean of Undergraduate Studies (MP 3.206; Mail Station MP 16; 972-883-6706).

4.27. Resolution of Transfer Disputes for Lower-Division Courses.

(a) The following procedures shall be followed by public institutions of higher education in the resolution of credit transfer disputes involving lower-division courses:

(1) If an institution of higher education does not accept course credit earned by a student at another institution of higher education, the receiving institution shall give written notice to the student and to the sending institution that transfer of the course credit is denied, and shall include in that notice the reasons for denying the credit.

(2) A student who receives notice as specified in paragraph (1) of this subsection may dispute the denial of credit by contacting a designated official at either the sending or the receiving institution.

(3) The two institutions and the student shall attempt to resolve the transfer of the course credit in accordance with Board rules and guidelines.

(4) If the transfer dispute is not resolved to the satisfaction of the student or the sending institution within 45 days after the date the student received written notice of denial, the sending institution may notify the Commissioner in writing of the request for transfer dispute resolution, and the institution that denies the course credit for transfer shall notify the Commissioner in writing of its denial and the reasons for the denial.

(b) The Commissioner or the Commissioner’s designee shall make the final determination about a dispute concerning the transfer of course credit and give written notice of the determination to the involved student and institutions.

(c) Each institution of higher education shall publish in its course catalogs the procedures specified in subsections (a), (b), (d), and (e) of this section.

(d) The Board shall collect data on the types of transfer disputes that are reported and the disposition of each case that is considered by the commissioner or the Commissioner’s designee.

(e) If a receiving institution has cause to believe that a course being presented by a student for transfer from another school is not of an acceptable level of quality, it should first contact the sending institution and attempt to resolve the problem. In the event that the two institutions are unable to come to a satisfactory resolution, the receiving institution may notify the Commissioner, who may investigate the course. If its quality is found to be unacceptable, the Board may discontinue funding for the course.
Appendix III

Rules and Regulations for Determining Residence Status

Section
21.727. Authority and Purpose.
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21.727. Authority and Purpose.

Texas Education Code, Section 54.075, requires the Board to adopt rules to carry out the purposes of Texas Education Code, Subchapter B, concerning the determination of resident status for tuition purposes.


The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise:

(1) **Census date** – the date in an academic term for which an institution is required to certify a person’s enrollment in the institution for the purposes of determining formula funding for the institution.

(2) **Coordinating Board or Board** – the Texas Higher Education Coordinating Board.

(3) **Core Residency Questions** – the questions promulgated by the Board and set forth in Revised Chart II, which is incorporated into this subchapter for all purposes, to be completed by a person and used by an institution to determine if the person is a Texas resident.

(4) **Dependent** – a person who:
   (A) is less than 18 years of age and has not been emancipated by marriage or court order; or
   (B) is eligible to be claimed as a dependent of a parent of the person for purposes of determining the parent’s income tax liability under the Internal Revenue Code of 1986.

(5) **Domicile** – a person’s principal, permanent residence to which the person intends to return after any temporary absence.

(6) **Eligible for Permanent Resident Status** – a person who has filed an I-485 application for permanent residency and has been issued a fee/filing receipt or notice of action.

(7) **Established a domicile in Texas** – a person has established a domicile in Texas if he or she has met the conditions shown in Section 21.730 (d) of this title (relating to Determination of Resident Status).

(8) **Eligible Nonimmigrant** – a person who has been issued a type of nonimmigrant visa by the USCIS that permits the person to establish a domicile in the United States.
(9) **Gainful employment** – activities intended to provide an income to a person or allow a person to avoid the expense of paying another person to perform the tasks (as in child care or the maintenance of a home). A person who is self-employed, employed as a homemaker, or who is living off his/her earnings may be considered gainfully employed for purposes of establishing residency, as may a person whose primary support is public assistance.

(10) **General Academic Teaching Institution** – The University of Texas at Austin; The University of Texas at El Paso; The University of Texas of the Permian Basin; The University of Texas at Dallas; The University of Texas at San Antonio; Texas A&M University, Main University; The University of Texas at Arlington; Tarleton State University; Prairie View A&M University; Texas Maritime Academy (now Texas A&M University – Galveston); Texas Tech University; University of North Texas; Lamar University; Lamar State College — Orange; Lamar State College — Port Arthur; Texas A&M University — Kingsville; Texas A&M University — Corpus Christi; Texas Woman’s University; Texas Southern University; Midwestern State University; University of Houston; University of Texas — Pan American; The University of Texas at Brownsville; Texas A&M University — Commerce; Sam Houston State University; Texas State University — San Marcos; West Texas A&M University; Stephen F. Austin State University; Sul Ross State University; Angelo State University; and The University of Texas at Tyler, and as defined in *Texas Education Code*, Section 61.003(3).

(11) **Institution or institution of higher education** – any public technical institute, public junior college, public senior college or university, medical or dental unit, or other agency of higher education as defined in *Texas Education Code*, Section 61.003(8).

(12) **Legal guardian** – a person who is appointed guardian under the *Texas Probate Code*, Chapter 693, or a temporary or successor guardian.

(13) **Maintain a residence** – to physically reside in a location. The maintenance of a residence is not interrupted by a temporary absence from the state, as provided in Section 21.730 (e) of this title (relating to Determination of Resident Status).

(14) **Managing conservator** – a parent, a competent adult, an authorized agency, or a licensed child-placing agency appointed by court order issued under the *Texas Family Code*, Title 5.

(15) **Nonresident tuition** – the amount of tuition paid by a person who does not qualify as a Texas resident under this subchapter unless such person qualifies for a waiver program under Section 21.735 of this title (relating to Waivers that Permit Nonresidents to Pay Resident Tuition).

(16) **Parent** – a natural or adoptive parent, managing or possessory conservator, or legal guardian of a person. The term does not include a step-parent.

(17) **Possessory conservator** – a natural or adoptive parent appointed by court order issued under the *Texas Family Code*, Title 5.

(18) **Private high school** – a private or parochial school accredited by an accrediting agency that is recognized and accepted by the Texas Private School Accreditation Commission. The term does not include a home school.

(19) **Public technical institute or college** – the Lamar Institute of Technology or any campus of the Texas State Technical College System.

(20) **Regular semester** – a fall or spring semester, typically consisting of 16 weeks.

(21) **Residence** – a person’s home or other dwelling place.

(22) **Residence Determination Official** – the primary individual at each institution who is responsible for the accurate application of state statutes and rules to individual student cases.

(23) **Resident tuition** – the amount of tuition paid by a person who qualifies as a Texas resident under this subchapter.

(24) **Temporary absence** – absence from the State of Texas with the intention to return, generally for a period of less than five years.
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(25) United States Citizenship and Immigration Services (USCIS) – the bureau of the U.S. Department of Homeland Security that is responsible for the administration of immigration and naturalization adjudication functions and establishing immigration services policies and priorities.

21.729. Effective Date of this Subchapter.

Each institution shall apply these rules beginning with enrollments for the Fall Semester, 2006.


(a) The following persons shall be classified as Texas residents and entitled to pay resident tuition at all institutions of higher education:

(1) a person who:
   (A) graduated from a public or accredited private high school in this state or, as an alternative to high school graduation, received the equivalent of a high school diploma in this state, and
   (B) maintained a residence continuously in this state for:
       (i) the thirty-six months immediately preceding the date of graduation or receipt of the diploma equivalent, as applicable; and
       (ii) the 12 months preceding the census date of the academic semester in which the person enrolls in an institution.

(2) a person who:
   (A) established a domicile in this state not less than 12 months before the census date of the academic semester in which the person enrolls in an institution; and
   (B) maintained a residence continuously in the state for the 12 months immediately preceding the census date of the academic semester in which the person enrolls in an institution.

(3) a dependent whose parent:
   (A) established a domicile in this state not less than 12 months before the census date of the academic semester in which the person enrolls in an institution; and
   (B) maintained a residence continuously in the state for the 12 months immediately preceding the census date of the academic semester in which the person enrolls in an institution.

(b) The following non-U.S. citizens may establish a domicile in this state for the purposes of subsection (a)(2) or (3) of this section:

(1) a Permanent Resident;

(2) a person who is eligible for permanent resident status, as defined in Section 21.728(6) of this title (relating to Definitions);

(3) an eligible nonimmigrant that holds one of the types of visas listed in Chart I and incorporated into this subchapter for all purposes;

(4) a person classified by the USCIS as a Refugee, Aslee, Parolee, Conditional Permanent Resident, or Temporary Resident;

(5) a person holding Temporary Protected Status, and Spouses and Children with approved petitions under the Violence Against Women Act (VAWA), an applicant with an approved USCIS I-360, Special Agricultural Worker, and a person granted deferred action status by USCIS;

(6) a person who has filed an application for Cancellation of Removal and Adjustment of Status under the Immigration Nationality Act 240A(b) or a Cancellation of Removal and Adjustment of Status under the Nicaraguan and Central American
Relief Act (NACARA), Haitian Refugee Immigrant Fairness Act (HRIFA), or the Cuban Adjustment Act, and who has been issued a fee/filing receipt or Notice of Action by USCIS; and

(7) a person who has filed for adjustment of status to that of a Permanent Resident under 8 United States Code 1255, or under the "registry" program (8 United States Code 1259), or the Special Immigrant Juvenile Program (8 USC 1101(a)(27)(J)) and has been issued a fee/filing receipt or Notice of Action by USCIS.

c) The domicile of a dependent's parent is presumed to be the domicile of the dependent unless the dependent establishes eligibility for resident tuition under subsection (a)(1) of this section.

d) A domicile in Texas is presumed if, at least 12 months prior to the census date of the semester in which he or she is to enroll, the person owns real property in Texas, owns a business in Texas, or is married to a person who has established a domicile in Texas. Gainful employment other than work-study and other such student employment can also be a basis for establishing a domicile.

e) The temporary absence of a person or a dependent’s parent from the state for the purpose of service in the U.S. Armed Forces, Public Health Service, Department of Defense, U.S. Department of State, as a result of an employment assignment, or for educational purposes, shall not affect a person’s ability to continue to claim that he or she is a domiciliary of this state. The person or the dependent’s parent shall provide documentation of the reason for the temporary absence.

(f) The temporary presence of a person or a dependent’s parent in Texas for the purpose of service in the U.S. Armed Forces, Public Health Service, Department of Defense or service with the U.S. Department of State, or as a result of any other type of employment assignment does not preclude the person or parent from establishing a domicile in Texas.


(a) To initially establish resident status under Section 21.730 of this title, (relating to Determination of Resident Status), a person shall provide the institution with a completed set of Core Residency Questions as set forth in Revised Chart II, which is incorporated into this subchapter for all purposes.

(b) An institution may request that a person provide documentation to support the answers to the Core Residency Questions. A list of appropriate documents is included in Revised Chart IV, which is incorporated into this subchapter for all purposes. In addition, the institution may request documents that support the information the student may provide in Revised Chart II, Section H.

(c) If a person who establishes resident status under Section 21.730(a)(1) of this title is not a Citizen of the United States or a Permanent Resident, the person shall, in addition to the other requirements of this section, provide the institution with a signed affidavit, stating that the person will apply to become a Permanent Resident as soon as the person becomes eligible to apply. The affidavit shall be required only when the person applies for resident status and shall be in the form provided in Chart III and incorporated into this subchapter for all purposes.

(d) An institution shall not impose any requirements in addition to the requirements established in this section for a person to establish resident status.


(a) Except as provided under subsection (c) of this section, a person who was enrolled in an institution for any part of the 2006 state fiscal year and who was classified as a resident of this state under Subchapter B, Chapter 54, Texas Education Code, in the last academic period of that year for which the person was enrolled is considered to be a resident of this state for purposes of this subchapter, as of the beginning of the fall semester, 2006.

(b) Except as provided by subsection (c) of this section, a person who has established resident status under this subchapter is entitled to pay resident tuition in each subsequent academic semester in which the person enrolls at any institution.
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(c) A person who enrolls in an institution after two or more consecutive regular semesters during which the person is not enrolled in a public institution shall submit the information required in Section 21.731 of this title, (relating to Information Required to Establish Resident Status), and satisfy all the applicable requirements to establish resident.

21.733. Reclassification Based on Additional or Changed Information.

(a) If a person is initially classified as a nonresident based on information provided through the set of Core Residency Questions, the person may request reclassification by providing the institution with supporting documentation as described in Revised Chart IV, which is incorporated into Section 21.731(b) of this title (relating to Information Required to Initially Establish Resident Status).

(b) A person shall provide the institution with any additional or changed information which may affect his or her resident or nonresident tuition classification under this subchapter.

(c) An institution may reclassify a person who had previously been classified as a resident or nonresident under this subchapter based on additional or changed information provided by the person.

(d) Any change made under this section shall apply to the first succeeding semester in which the person is enrolled, if the change is made on or after the census date of that semester. If the change is made prior to the census date, it will apply to the current semester.

21.734. Errors in Classification.

(a) If an institution erroneously permits a person to pay resident tuition and the person is not entitled or permitted to pay resident tuition under this subchapter, the institution shall charge nonresident tuition to the person beginning with the semester following the date that the institution discovers the error.

(b) Not later than the first day of the following semester, the institution may notify the person that he or she must pay the difference between resident and nonresident tuition for each previous semester in which the student should not have paid resident tuition, if:

1. the person failed to provide to the institution, in a timely manner after the information becomes available or on request by the institution, any information that the person reasonably should know would be relevant to an accurate classification by the institution under this subchapter information; or

2. the person provided false information to the institution that the person reasonably should know could lead to an erroneous classification by the institution under this subchapter.

(c) If the institution provides notice under subsection (b) of this section, the person shall pay the applicable amount to the institution not later than the 30th day after the date the person is notified of the person’s liability for the amount owed. After receiving the notice and until the amount is paid in full, the person is not entitled to receive from the institution a certificate or diploma, if not yet awarded on the date of the notice, or official transcript that is based at least partially on or includes credit for courses taken while the person was erroneously classified as a resident of this state.

(d) If an institution erroneously classified a person as a resident of this state under this subchapter and the person is entitled or permitted to pay resident tuition under this subchapter, that person is not liable for the difference between resident and nonresident tuition under this section.

(e) If an institution erroneously classifies a person as a nonresident and the person is a resident under this subchapter, the institution shall refund the difference in resident and nonresident tuition for each semester in which the student was erroneously classified and paid the nonresident tuition rate.

A person who is classified as a nonresident under the provisions of this section shall be permitted to pay resident tuition, if the person qualifies for one of the following waiver programs:

1. Economic Development and Diversification Program.

   (A) A nonresident person, (including a Citizen, a Permanent Resident of the U.S., a person who is eligible to be a Permanent Resident of the U.S., and an eligible nonimmigrant) whose family has been transferred to Texas by a company under the state’s Economic Development and Diversification Program, and a person’s spouse and children shall pay resident tuition as soon as they move to Texas, if the person provides the institution with a letter of intent to establish Texas as his/her home. A person who moves to Texas to attend an institution before his/her family is transferred is permitted to pay the resident tuition beginning with the first semester or term after the family moves to the state.

   (B) After the family has maintained a residence in Texas for 12 months, the person may request a change in classification in order to pay resident tuition.

   (C) A current list of eligible companies is maintained on the Coordinating Board web site at http://www.collegefortexans.com/.

2. Program for Teachers, Professors, their Spouses and Dependents.

   (A) A nonresident person (including a Citizen, Permanent Resident of the U.S., a person who is eligible to be a Permanent Resident of the U.S., and an eligible nonimmigrant) employed as a teacher or professor at least half time on a regular monthly salary basis (not as hourly employee) by an institution shall pay resident tuition at any institution in the state and the spouse and dependent children of the nonresident person shall also pay resident tuition.

   (B) This waiver program is applicable only during the person’s periods of employment.

   (C) If a spouse or dependent child of the teacher or professor attends an institution other than the employing institution, the employing institution shall provide a letter to the spouse or child’s institution verifying the employment of the teacher or professor.

3. Program for Teaching Assistants and Research Assistants, their Spouses and Dependents.

   (A) A nonresident person (including a Citizen, Permanent Resident of the U.S., a person who is eligible to be a Permanent Resident of the U.S., and an eligible nonimmigrant) employed by an institution as a teaching or research assistant on at least a half-time basis in a position related to his/her degree program shall pay resident tuition at any institution in this state and the spouse and dependent children of the nonresident person shall also pay resident tuition.

   (B) The employing institution shall determine whether or not the person’s employment relates to the degree program.

   (C) If a spouse or dependent child of the teaching or research assistant attends an institution other than the employing institution, the employing institution shall provide a letter to the spouse or child’s institution verifying the employment of the teaching or research assistant.

   (D) This waiver program is applicable only during the person’s periods of employment.

4. Program for Competitive Scholarship Recipients.

   (A) A nonresident person (including a Citizen, Permanent Resident of the U.S., a person who is eligible to be a Permanent Resident of the U.S., and an eligible nonimmigrant) who receives a competitive scholarship from the institution is entitled to pay resident tuition.

   (B) In order for the person to be eligible for this waiver program, the competitive scholarship must:
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(i) total at least $1,000 for the period of time covered by the scholarship, not to exceed 12 months; and

(ii) be awarded by a scholarship committee authorized in writing by the institution’s administration to grant scholarships that permit this waiver of nonresident tuition; and

(iii) be awarded according to criteria published in the institution’s paper or electronic catalog, available to the public in advance of any application deadline; and

(iv) be awarded under circumstances that cause both the funds and the selection process to be under the control of the institution; and

(v) permit awards to both resident and nonresident persons.

(C) The scholarship award shall specify the semester or semesters for which the scholarship is awarded and a waiver of nonresident tuition under this provision shall not exceed the semester or semesters for which the scholarship is awarded.

(D) If the scholarship is terminated for any reason prior to the end of the semester or semesters for which the scholarship was initially awarded, the person shall pay nonresident tuition for any semester following the termination of the scholarship.

(E) The total number of persons receiving a waiver of nonresident tuition in any given semester under this provision shall not exceed 5 percent of the students enrolled in the same semester in the prior year in that institution.

(F) If the scholarship recipient is concurrently enrolled at more than one institution, the waiver of nonresident tuition is only effective at the institution awarding the scholarship. An exception for this rule exists for a nonresident person who is simultaneously enrolled in two or more institutions of higher education under a program offered jointly by the institutions under a partnership agreement. If one of the partnership institutions awards a competitive scholarship to a person, the person is entitled to a waiver of nonresident tuition at the second institution.

(G) If a nonresident person is awarded a competitive academic scholarship or stipend under this provision and the person is accepted in a clinical biomedical research training program designed to lead to both a doctor of medicine and doctor of philosophy degree, he or she is eligible to pay the resident tuition rate.

(5) Programs for Lowered Tuition for Individuals from Bordering States or Mexico.

(A) Programs that Require Reciprocity. Waivers of nonresident tuition made through each of the following three programs for persons from states neighboring Texas must be based on reciprocity and the institution shall not grant these waivers unless the institution has been provided with a current written agreement with a similar institution in the other state, agreeing to lower tuition for Texas students attending that institution. A participating Texas institution shall file a copy of such agreements with the Board and the agreements shall not be more than 2 years old. The amount of tuition charged shall not be less than the Texas resident tuition rate.

(i) Persons residing in New Mexico, Oklahoma, Arkansas or Louisiana may pay a lowered nonresident tuition when they attend Texas A&M-Texarkana, Lamar State College-Port Arthur, Lamar State College-Orange or any public community or technical college located in a county adjacent to their home state.

(ii) Persons residing in New Mexico and Oklahoma may pay a lowered nonresident tuition when they attend a public technical college located within 100 miles of the border of their home state.

(iii) Persons residing in counties or parishes of New Mexico, Oklahoma, Arkansas or Louisiana adjacent to Texas may pay a lowered nonresident tuition at any institution.

(iv) If a person or a dependent child’s family moves to Texas from a bordering state after the person or dependent child has received a waiver of nonresident tuition based on reciprocity as described in this section, the person is eligible for a continued waiver of nonresident tuition for the 12-month period after the relocation to Texas.
(B) Programs That Do Not Require Reciprocity. Persons who reside in another state may pay a lowered nonresident tuition not less than $30 per semester credit hour above the current resident tuition rate when they attend a general academic teaching institution located within 100 miles of the Texas border if:

(i) the governing board of the institution approves the tuition rate as in the best interest of the institution and finds that such a rate will not cause unreasonable harm to any other institution; and

(ii) the Commissioner approves the tuition rate by finding that the institution has a surplus of total educational and general space as calculated by the Board’s most current space projection model. This obligation to obtain the approval of the Commissioner is continuing and approval to participate in this waiver program must be obtained at least every two years.

(C) Programs for Residents of Mexico. Subject to the following provisions, persons who are currently residents of Mexico and those persons who are temporarily residing outside of Mexico but with definite plans to return to Mexico shall pay resident tuition.

(i) An unlimited number of residents of Mexico who have demonstrated financial need and attend a general academic teaching institution or a component of the Texas State Technical College System, if the institution or component is located in a county adjacent to Mexico, Texas A&M University–Corpus Christi, Texas A&M University– Kingsville, the University of Texas at San Antonio, or Texas Southmost College shall pay resident tuition.

(ii) A limited number of residents of Mexico who have financial need may attend a general academic teaching institution or campus of the Texas State Technical College System located in counties not adjacent to Mexico and pay resident tuition. This waiver program is limited to the greater of two students per 1000 enrollment, or 10 students per institution.

(iii) An unlimited number of residents of Mexico who have demonstrated financial need and register in courses that are part of a graduate degree program in public health conducted by an institution in a county immediately adjacent to Mexico shall pay resident tuition.

(6) Program for the beneficiaries of the Texas Tomorrow Fund. A person who is a beneficiary of the Texas Tomorrow Fund shall pay resident tuition and required fees for semester hours paid under the prepaid tuition contract. If the person is not a Texas resident, all tuition and fees not paid under the contract shall be paid at the nonresident rate.

(7) Program for Inmates of the Texas Department of Criminal Justice. All inmates of the Texas Department of Criminal Justice shall pay resident tuition.

(8) Program for Foreign Service Officers. A Foreign Service officer employed by the U.S. Department of State and enrolled in an institution shall pay resident tuition if the person is assigned to an office of the U.S. Department of State that is located in Mexico.

(9) Program for Registered Nurses in Postgraduate Nursing Degree Programs. An institution may permit a registered nurse authorized to practice professional nursing in Texas to pay resident tuition and fees without regard to the length of time that the registered nurse has resided in Texas, if the nurse:

(A) is enrolled in a program designed to lead to a master’s degree or other higher degree in nursing; and

(B) intends to teach in a program in Texas designed to prepare students for licensure as registered nurses.

(10) Programs for Military and Their Families. Members of the U.S. Armed Forces, Army National Guard, Air National Guard, Army, Air Force, Navy, Marine Corps or Coast Guard Reserves and Commissioned Officers of the Public Health Service, and their Spouses or Dependent Children.

(A) Assigned to Duty in Texas. Nonresident members of the U.S. Armed Forces, members of Texas units of the Army or Air National Guard, Army, Air Force, Navy, Marine Corps or Coast Guard Reserves and Commissioned Officers of the Public
Health Service who are assigned to duty in Texas, and their spouses, or dependent children, shall pay resident tuition. To qualify, the person shall submit during his or her first semester of enrollment in which he or she will be using the waiver program, a statement from an appropriately authorized officer in the service, certifying that he or she (or a parent) will be assigned to duty in Texas on the census date of the term he or she plans to enroll and that he or she, if a member of the National Guard or Reserves, is not in Texas only to attend training with Texas units. Such persons shall pay resident tuition so long as they reside continuously in Texas or remain continuously enrolled in the same degree or certificate program. For purposes of this subsection, a person is not required to enroll in a summer semester to remain continuously enrolled.

(B) After Assignment to Duty in Texas. A spouse and/or dependent child of a nonresident member of the U.S. Armed Forces, or of a Commissioned Officer of the Public Health Service who has been reassigned elsewhere after having been assigned to duty in Texas shall pay resident tuition so long as the spouse or child resides continuously in Texas. For purposes of this subsection, a person is not required to enroll in a summer semester to remain continuously enrolled.

(C) Out-of-State Military. A spouse and/or dependent child of a member of the U.S. Armed Forces, or of a Commissioned Officer of the Public Health Service who is stationed outside of Texas shall pay resident tuition if the spouse and/or child moves to this state and files a statement of intent to establish residence in Texas with the institution that he or she attends.

(D) Survivors. A spouse and/or dependent child of a member of the U.S. Armed Forces, or of a Commissioned Officer of the Public Health Service who died while in service, shall pay resident tuition if the spouse and/or child moves to Texas within 60 days of the date of death. To qualify, a person shall submit satisfactory evidence to the institution that establishes the date of death of the member and that the spouse and/or dependent child has established a domicile in Texas.

(E) Spouse and Dependents who Previously Lived in Texas. A spouse and/or dependent child of a member of the U.S. Armed Forces, or of a Commissioned Officer of the Public Health Service who previously resided in Texas for at least six months shall pay resident tuition, if the member or commissioned officer, at least 12 months prior to the census date of the spouse’s or dependent child’s enrollment in an institution:

(i) filed proper documentation with the military or Public Health Service to change his/her permanent residence to Texas and designated Texas as his/her place of legal residence for income tax purposes; and

(ii) registered to vote in Texas, and

(iii) has satisfied at least one of the following requirements for the 12 months prior to the first day of the relevant semester:

(I) ownership of real estate in Texas with no delinquent property taxes;

(II) registration of an automobile in Texas, or

(III) execution of a currently-valid will deposited with a county clerk in Texas that indicates he/she is a resident of Texas.

(F) Honorably Discharged Veterans. A former member of the U.S. Armed Forces or Commissioned Officer of the Public Health Service and his/her spouse and/or dependent child shall pay resident tuition for any semester beginning prior to the first anniversary of separation from the military or health service, if the former member:

(i) had, at least one year preceding the census date of the term or semester, executed a document with U.S. Armed Forces or Public Health Service that is in effect on the census date of the term or semester and that changed his/her permanent residence to Texas and designated Texas as his/her place of legal residence for income tax purposes; and

(ii) had registered to vote in Texas for at least 12 months prior to the census date of the term or semester, and

(iii) provides documentation that the member has, not less than 12 months prior to the census date of the term in which he or she plans to enroll, taken 1 of the 3 following actions:
(III) executed a currently-valid will that has been deposited with a county clerk in Texas that indicates he/she is a resident of Texas.

(G) NATO Forces. Non-immigrant aliens stationed in Texas under the agreement between the parties to the North Atlantic Treaty regarding status of forces, their spouses and dependent children, shall pay resident tuition.

(H) Radiological Science Students at Midwestern State University. Members of the U.S. Armed Forces stationed outside the State of Texas who are enrolled in a bachelor of science or master of science degree program in radiological sciences at Midwestern State University by instructional telecommunication shall pay resident tuition and other fees or charges provided for Texas residents, if they began the program of study while stationed at a military base in Texas.

(11) Program for the Center for Technology Development and Transfer. Under agreements authorized by Texas Education Code, Section 65.45, a person employed by the entity with whom the University of Texas System enters into such an agreement, or the person’s spouse or child, may pay resident tuition when enrolled in a University of Texas System institution.


(a) Each institution shall designate an individual that is employed by the institution as a Residence Determination Official.

(b) The Residence Determination Official shall:

(1) be knowledgeable of the requirements set out in these rules and the applicable statutes; and

(2) attend at least one training or workshop provided by the Coordinating Board regarding these rules and the applicable statutes in each state fiscal year.
## Chart I. Eligible Nonimmigrants – Persons with Visas that Allow them to Domicile in the United States

<table>
<thead>
<tr>
<th>Visa Type</th>
<th>Nonimmigrant (Temporary) Visa Categories</th>
<th>Eligible to Domicile in the United States?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>Ambassadors, public ministers or career diplomats and their immediate family members</td>
<td>Yes</td>
</tr>
<tr>
<td>A-2</td>
<td>Other accredited officials or employees of foreign governments and their immediate family members</td>
<td>Yes</td>
</tr>
<tr>
<td>A-3</td>
<td>Personal attendants, servants or employees and their immediate family members of A-1 and A-2 visa holders</td>
<td>Yes</td>
</tr>
<tr>
<td>B-1</td>
<td>Temporary visitor for business</td>
<td>No</td>
</tr>
<tr>
<td>B-2</td>
<td>Temporary visitor for pleasure</td>
<td>No</td>
</tr>
<tr>
<td>C-1</td>
<td>Foreign travelers in transit through the United States</td>
<td>No</td>
</tr>
<tr>
<td>C-1D</td>
<td>Combined transit and crewmen visa</td>
<td>No</td>
</tr>
<tr>
<td>C-2</td>
<td>Person in transit to UN Headquarters under §11 (3), (4), or (5) of the Headquarter Agreement.</td>
<td>No</td>
</tr>
<tr>
<td>C-3</td>
<td>Foreign government official, members of immediate family, attendant or personal employee in transit</td>
<td>No</td>
</tr>
<tr>
<td>C-4</td>
<td>Transit without Visa. See TWOV</td>
<td>No</td>
</tr>
<tr>
<td>D-1</td>
<td>Crewmember departing on same vessel of arrival</td>
<td>No</td>
</tr>
<tr>
<td>D-2</td>
<td>Crewmember departing by means other than vessel of arrival</td>
<td>No</td>
</tr>
<tr>
<td>E-1</td>
<td>Treaty traders, spouse and children</td>
<td>Yes</td>
</tr>
<tr>
<td>E-2</td>
<td>Treaty investors, spouse and children</td>
<td>Yes</td>
</tr>
<tr>
<td>F-1</td>
<td>Academic student</td>
<td>No</td>
</tr>
<tr>
<td>F-2</td>
<td>Spouse or child of F-1</td>
<td>No</td>
</tr>
<tr>
<td>F-3</td>
<td>Academic students who are Canadian or Mexican citizens, who commute across the border to study full-time or part-time in the United States.</td>
<td>No**</td>
</tr>
<tr>
<td>G-1</td>
<td>Principal resident representative of recognized foreign member government to international organization, and members of immediate family.</td>
<td>Yes</td>
</tr>
<tr>
<td>G-2</td>
<td>Other accredited representatives of recognized foreign member governments to international organization and their immediate family members</td>
<td>Yes</td>
</tr>
<tr>
<td>G-3</td>
<td>Representatives of non-recognized or nonmember government to international organization, and members of immediate family</td>
<td>Yes</td>
</tr>
<tr>
<td>G-4</td>
<td>International organization officer or employee, and their immediate family members</td>
<td>Yes</td>
</tr>
<tr>
<td>G-5</td>
<td>Attendants, servants and personal employees of G-1, G-2, G-3 or G-4 visa holders and their immediate family members</td>
<td>Yes</td>
</tr>
<tr>
<td>H-1B</td>
<td>Specialty Occupations, DOD workers, fashion models</td>
<td>Yes</td>
</tr>
<tr>
<td>H-1C</td>
<td>Nurses going to work for up to three years in health professional shortage areas</td>
<td>No</td>
</tr>
<tr>
<td>H-2A</td>
<td>Temporary agricultural workers</td>
<td>No</td>
</tr>
<tr>
<td>H-2B</td>
<td>Temporary workers, skilled and unskilled</td>
<td>No</td>
</tr>
<tr>
<td>H-3</td>
<td>Trainee</td>
<td>No</td>
</tr>
<tr>
<td>H-4</td>
<td>Spouse or child of H-1, H-2 or H-3 visa holders</td>
<td>H-4 dependents of H-1B Yes; all other H-4 dependents, no</td>
</tr>
<tr>
<td>I</td>
<td>Visas for foreign media representatives</td>
<td>Yes</td>
</tr>
<tr>
<td>J-1</td>
<td>Visas for exchange visitors</td>
<td>No</td>
</tr>
<tr>
<td>J-2</td>
<td>Spouse or child of J-1 visa holders</td>
<td>No</td>
</tr>
<tr>
<td>Code</td>
<td>Visa Type</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td>K-1</td>
<td>Fiancé(e)</td>
<td>Yes</td>
</tr>
<tr>
<td>K-2</td>
<td>Minor child of K-1</td>
<td>Yes</td>
</tr>
<tr>
<td>K-3</td>
<td>Spouse of a U.S. citizen (LIFE Act)</td>
<td>Yes</td>
</tr>
<tr>
<td>K-4</td>
<td>Child of a K-3 (LIFE Act)</td>
<td>Yes</td>
</tr>
<tr>
<td>L1-A</td>
<td>Executive, managerial</td>
<td>Yes</td>
</tr>
<tr>
<td>L1-B</td>
<td>Specialized knowledge</td>
<td>Yes</td>
</tr>
<tr>
<td>L-2</td>
<td>Spouse or child of L-1</td>
<td>Yes</td>
</tr>
<tr>
<td>M-1</td>
<td>Vocational or other nonacademic students, other than language students</td>
<td>No</td>
</tr>
<tr>
<td>M-2</td>
<td>Immediate families of M-1 visa holders</td>
<td>No</td>
</tr>
<tr>
<td>M-3</td>
<td>Vocational students who are Canadian or Mexican citizens, who commute across the border to study full-time or part-time in the U.S.</td>
<td>No**</td>
</tr>
<tr>
<td>N-8</td>
<td>Parent of alien classified as SK-3 “Special Immigrant”</td>
<td>Yes</td>
</tr>
<tr>
<td>N-9</td>
<td>Child of N-8, SK-1, SK-2, or SK-4 “Special Immigrant”</td>
<td>Yes</td>
</tr>
<tr>
<td>NATO 1</td>
<td>Principal Permanent Representative of Member State to NATO and resident members of official staff or immediate family</td>
<td>Yes</td>
</tr>
<tr>
<td>NATO 2</td>
<td>Other representatives of Member State; Dependents of Member of a Force entering in accordance with the provisions of NATO Status-of-Forces agreement; Members of such a Force if issued visas</td>
<td>Yes</td>
</tr>
<tr>
<td>NATO 3</td>
<td>Official clerical staff accompanying Representative of Member State to NATO or immediate member</td>
<td>Yes</td>
</tr>
<tr>
<td>NATO 4</td>
<td>Official of NATO other than those qualified as NATO-1 and immediate family</td>
<td>Yes</td>
</tr>
<tr>
<td>NATO 5</td>
<td>Expert other than NATO officials qualified under NATO-4, employed on behalf of NATO and immediate family</td>
<td>Yes</td>
</tr>
<tr>
<td>NATO 6</td>
<td>Members of civilian component who is either accompanying a Force entering in accordance with the provisions of the NATO Status-of-Forces agreement; attached to an Allied headquarters under the protocol on the Status of International Military headquarters set up pursuant to the North Atlantic Treaty; and their dependents</td>
<td>Yes</td>
</tr>
<tr>
<td>NATO 7</td>
<td>Attendants, servants or personal employees of NATO-1, NATO-2, NATO-3, NATO-4, NATO-5 or NATO-6, or immediate</td>
<td>Yes</td>
</tr>
<tr>
<td>O-1</td>
<td>Extraordinary ability in the sciences, arts, education, business, athletics</td>
<td>Yes</td>
</tr>
<tr>
<td>O-2</td>
<td>Essential support staff of O-1 visa holders</td>
<td>No</td>
</tr>
<tr>
<td>O-3</td>
<td>Immediate family members of O-1 and O-2 visa holders</td>
<td>O-3 dependents of O-1 holders; Yes; O-3 dependents of O-2 holders, No</td>
</tr>
<tr>
<td>P-1</td>
<td>Individual or team athletes</td>
<td>No</td>
</tr>
<tr>
<td>P-2</td>
<td>Artists and entertainers in reciprocal exchange programs</td>
<td>No</td>
</tr>
<tr>
<td>P-3</td>
<td>Artists and entertainers in culturally unique programs</td>
<td>No</td>
</tr>
<tr>
<td>P-4</td>
<td>Spouse or child of P-1, P-2 and P-3.</td>
<td>No</td>
</tr>
<tr>
<td>Q-1</td>
<td>International cultural-exchange visitors</td>
<td>No</td>
</tr>
<tr>
<td>Q-2</td>
<td>Irish Peace Process Cultural and Training Program (Walsh Visas)</td>
<td>No</td>
</tr>
<tr>
<td>Q-3</td>
<td>Spouse or child of Q-2</td>
<td>No</td>
</tr>
<tr>
<td>R-1</td>
<td>Religious workers</td>
<td>Yes</td>
</tr>
<tr>
<td>R-2</td>
<td>Spouse or child of R-1</td>
<td>Yes</td>
</tr>
<tr>
<td>S-5</td>
<td>Informant of criminal organization information</td>
<td>No</td>
</tr>
<tr>
<td>S-6</td>
<td>Informant of terrorism information</td>
<td>No</td>
</tr>
<tr>
<td>T-1</td>
<td>Victim of a severe form of trafficking in persons</td>
<td>Yes</td>
</tr>
<tr>
<td>T-2</td>
<td>Spouse of a T-1</td>
<td>Yes</td>
</tr>
<tr>
<td>T-3</td>
<td>Child of a T-1</td>
<td>Yes</td>
</tr>
<tr>
<td>T-4</td>
<td>Parent of a T-1 visa holder (if the child is under 21 years of age)</td>
<td>Yes</td>
</tr>
<tr>
<td>TC</td>
<td>No longer issued. TN issued in its place.</td>
<td>No</td>
</tr>
<tr>
<td>TD</td>
<td>Spouse or child accompanying TN</td>
<td>No</td>
</tr>
<tr>
<td>TN</td>
<td>Trade visas for Canadians and Mexicans in NAFTA</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Eligible</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>TPS</td>
<td>Temporary Protected Status</td>
<td>Yes</td>
</tr>
<tr>
<td>TWOV</td>
<td>Passenger or Crew</td>
<td>No</td>
</tr>
<tr>
<td>U-1</td>
<td>Victim of certain criminal activity</td>
<td>Yes</td>
</tr>
<tr>
<td>U-2</td>
<td>Spouse of a U-1</td>
<td>Yes</td>
</tr>
<tr>
<td>U-3</td>
<td>Child of a U-1</td>
<td>Yes</td>
</tr>
<tr>
<td>U-4</td>
<td>Parent of a U-1 visa holder (if the child is under 21 years of age).</td>
<td>Yes</td>
</tr>
<tr>
<td>V-1</td>
<td>Spouse of Legal Permanent Resident (LPR) who is the principal beneficiary of a family-based petition (I-130) which was filed prior to December 21, 2000, and has been pending for at least three years</td>
<td>Yes</td>
</tr>
<tr>
<td>V-2</td>
<td>Child of Legal Permanent Resident (LPR) who is the principal beneficiary of a family-based petition (I-130) which was filed prior to December 21, 2000, and has been pending for at least three years</td>
<td>Yes</td>
</tr>
<tr>
<td>V-3</td>
<td>Derivative child of a V-1 or V-2 visa holder</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Please note:** these international, commuting students may be eligible for a waiver of nonresident tuition under *Texas Education Code* §54.060(b).
Revised Chart II

Core Residency Questions

Texas Higher Education Coordinating Board rule 21.731 requires each student applying to enroll at an institution to respond to a set of core residency questions for the purpose of determining the student’s eligibility for classification as a resident.

PART A. Student Basic Information. All Students must complete this section.

Name: ___________________________________ Student ID Number: ____________________

Date of Birth: ____________________________

PART B. Previous Enrollment. For all students.

1. During the 12 months prior to the term for which you are applying, did you attend a public college or university in Texas in a fall or spring term?
   Yes ___ No ___

   If you answered “no”, please continue to Part C.
   If you answered “yes”, complete questions 2-5:

2. What Texas public institution did you last attend? (Give full name, not just initials.)

   ________________________________________ ________________________________

3. In which terms were you last enrolled? (check all that apply)
   _____fall, 200____ _____spring, 200____

4. During your last semester at a Texas public institution, did you pay resident (in-state) or nonresident (out-of-state)?
   _____resident (in-state) _____ nonresident (out-of-state) _____ unknown

5. If you paid in-state tuition at your last institution, was it because you were classified as a resident or because you were a nonresident who received a waiver?
   _____resident _____ nonresident with a waiver _____ unknown

IMPORTANT: If you were enrolled at a Texas public institution during a fall or spring semester within the previous 12 months and were classified as a Texas resident, skip to Part I, sign and date this form and submit it to your institution. If you were not enrolled, or if you were enrolled but classified as a nonresident, proceed to Part C.

PART C. Residency Claim.

Are you a resident of Texas? Yes_____ No ____

   If you answered yes, continue to Part D.
   If you answered no, complete the following question and continue to Part I.

   Of what state or country are you a resident? ______________________

   If you are uncertain, continue to Part D.
PART D. Acquisition of High School Diploma or GED.

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. a. Did you graduate from high school or complete a GED in TX?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. b. If you graduated from high school, what was the name and city of the school?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Did you live in TX the 36 months leading up to high school graduation or completion of the GED?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. When you begin the semester for which you are applying, will you have lived in TX for the previous 12 months?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Are you a U.S. Citizen or Permanent Resident?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Instructions to Part D.*

If you answered “no” to question 1a or 2 or 3, continue to Part E.
If you answered “yes” to all four questions, skip to Part I.
If you answered “yes” to questions 1, 2 and 3, but “no” to question 4, complete a copy of the Affidavit in Chart III, provided as an Attachment to this form, skip to Part I of this form, and submit both this form and the affidavit to your institution.

PART E. Basis of Claim to Residency. TO BE COMPLETED BY EVERYONE WHO DID NOT ANSWER “YES” TO QUESTIONS 1a, 2, AND 3 OF PART D.

1. Do you file your own federal income tax as an independent tax payer? Yes___ No ___

2. Are you claimed as a dependent or are you eligible to be claimed as a dependent by a parent or court-appointed legal guardian? Yes___ No ___

   *(To be eligible to be claimed as a dependent, your parent or legal guardian must provide at least one half of your support. A step-parent does not qualify as a parent if he/she has not adopted the student.)*

3. If you answered “No” to both questions above, who provides the majority of your support?
   Self___ parent or guardian___ other: (list) ______________________

*Instructions to Part E.*

If you answered “yes” to question 1, continue to Part F.
If you answered “yes” to question 2, skip to Part G.
If you answered “no” to 1 and 2 and “self” to question 3, continue to Part F.
If you answered “no” to 1 and 2 and “parent or guardian” to question 3, skip to Part G.
If you answered “no” to 1 and 2 and “other” to question 3, skip to Part H and provide an explanation, and complete Part I.
**PART F. Questions for students who answered “Yes” to Question 1 or “Self” to Question 3 of PART E.**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Years</th>
<th>Mo.</th>
<th>Visa/Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are you a U.S. Citizen?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Are you a Permanent Resident of the U.S.?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Are you a foreign national whose application for Permanent Resident Status has been preliminarily reviewed? (You should have received a fee/filing receipt or Notice of Action (I-797) from USCIS showing your I-485 has been reviewed and has not been rejected).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Are you a foreign national here with a visa or are you a Refugee, Asylee, Parolee or here under Temporary Protective Status? If so, indicate which.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Do you currently live in Texas? If you are out of state due to a temporary assignment by your employer or other temporary purpose, please explain in Part H.</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. a. If you currently live in Texas, how long have you been living here?</td>
<td></td>
<td></td>
<td>Months</td>
<td>Years</td>
<td></td>
</tr>
<tr>
<td>b. What is your main purpose for being in the state? If for reasons other than those listed, give an explanation in Section H.</td>
<td>Go to College</td>
<td>Establish/maintain a home</td>
<td>Work Assignment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. If you are a member of the U.S. military, is Texas your Home of Record? What state is listed as your military legal residence for tax purposes on your Leave and Earnings Statement?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Do any of the following apply to you? (Check all that apply)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Hold the title to real property (home, land) in Texas? If yes, date acquired: ________________________</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Own a business in Texas? If yes, date acquired: ________________________</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Hold a state or local license to conduct a business or practice a profession in TX? If yes, date acquired: ________________________</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. For the past 12 months, have you: (Check all that apply)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. been gainfully employed in TX?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. received services from a social service agency that provides services to homeless persons?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Are you married to a person who could answer “yes” to any part of question 8 or 9?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. If yes, indicate which question could be answered yes by your spouse:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. How long have you been married to the Texas resident?</td>
<td></td>
<td></td>
<td>Mo.</td>
<td>Yr.</td>
<td></td>
</tr>
</tbody>
</table>
### PART G. Questions for students who answered “Parent” or “Legal Guardian” to Question 3 of PART E.

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Years</th>
<th>Mo.</th>
<th>Visa/Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is the parent or legal guardian upon whom you base your claim of residency a U.S. citizen?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Is the parent or legal guardian upon whom you base your claim of residency a Permanent Resident?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Is this parent or legal guardian a foreign national whose application for Permanent Resident Status has been preliminarily reviewed? (He or she should have received a fee/filing receipt or Notice of Action (I-797) from the USCIS showing his or her I-485 has been reviewed and has not been rejected)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Is this parent or legal guardian a foreign national here with a visa or a Refugee, Asylee, Parolee or here under Temporary Protective Status? If so, indicate which.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Does this parent or legal guardian currently live in Texas? If he or she is out of state due to a temporary assignment by his/her employer or other temporary purpose, please explain in Part H.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. a. If he or she is currently living in Texas, how long has he or she been living here?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. What is your parent’s or legal guardian’s main purpose for being in the state? If for reasons other than those listed, give an explanation in Section H.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. If he or she is a member of the U.S. military, is Texas his or her Home of Record? What state is listed as his or her military legal residence for tax purposes on his or her Leave and Earnings Statement?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Do any of the following apply to your parent or guardian? (Check all that apply)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Hold the title to real property (home, land) in Texas? If yes, date acquired:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Own a business in Texas? If yes, date acquired:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Hold a state or local license to conduct a business or practice a profession in TX? If yes, date acquired:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. For the past 12 months, has your parent or guardian: (Check all that apply)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. been gainfully employed in TX?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. received services from a social service agency that provides services to homeless persons?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Is your parent or legal guardian married to a person who could answer “yes” to any part of question 8 or 9?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. If yes, indicate which question could be answered yes by your parent or guardian’s spouse:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. How long has your parent or guardian been married to the Texas resident?</td>
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Part H. General Comments. Is there any additional information that you believe your college should know in evaluating your eligibility to be classified as a resident? If so, please provide it below:

PART I. Certification of Residency. All students must complete this section.

I understand that officials of my college/university will use the information submitted on this form to determine my status for residency eligibility. I authorize the college/university to verify the information I have provided. I agree to notify the proper officials of the institution of any changes in the information provided. I certify that the information on this application is complete and correct and I understand that the submission of false information is grounds for rejection of my application, withdrawal of any offer of acceptance, cancellation of enrollment and/or appropriate disciplinary action.

Signature: ________________________________ Date: ______________________
AFFIDAVIT

STATE OF TEXAS

COUNTY OF __________________

Before me, the undersigned Notary Public, on this day personally appeared ____________________________________________, known to me, who being by me duly sworn upon his/her oath, deposed and said:

1. My name is ____________________________________________. I am ___ years of age and have personal knowledge of the facts stated herein and they are all true and correct.

2. I graduated or will graduate from a Texas high school or received my GED certificate in Texas.

3. I resided in Texas for three years leading up to graduation from high school or receiving my GED certificate.

4. I have resided or will have resided in Texas for the 12 months prior the census date of the semester in which I will enroll in ____________________________________________ (college/university).

5. I have filed or will file an application to become a permanent resident at the earliest opportunity that I am eligible to do so.

In witness whereof, this ____________ day of ________________________, __________.

______________________________
(Signature)

______________________________
(Printed Name)

______________________________
(Student I.D.#)

SUBSCRIBED TO AND SWORN TO BEFORE ME, on the ________________ day of ________________________, to certify which witness my hand and official seal.

____________________________________________________________________
Notary Public in and for the State of Texas
Revised Chart IV
Documentation to Support Domicile and Residency

The following documentation may be requested by the institution in order to resolve issues raised by responses to the Core Residency Questions. The listed documents may be used to establish that the person is domiciled in Texas and has maintained a residence in Texas continuously for 12 months prior to the census date.

Part A
Documentation that can Support the Establishment of a Domicile
and Demonstrate the Maintenance of a Residence in Texas
for the 12 Months Prior to the Census Date of the Term in Which the Person Enrolls

1. An employer’s statement of dates of employment (beginning and current or ending dates) that encompass at least 12 months. Other documents that show the person has been engaged in activities intended to provide an income to a person or allow a person to avoid the expense of paying another person to perform the tasks (as in child care or the maintenance of a home) may also be used, as well as documents that show the person is self-employed, employed as a homemaker, or is living off his/her earnings, or through public assistance. Student employment, such as work-study, the receipt of stipends, fellowships or research or teaching assistanceships do not qualify as a basis for establishing a domicile.

2. For a homeless person, written statements from the office of one or more social service agencies located in Texas that attests to the provision of services to the homeless person for the 12 months prior to the census date of the term in which the person enrolls.

Part B
Documentation, which (if accomplished and maintained for the 12 months prior to the census date of the term in which the person enrolls and if accompanied by at least ONE type of document listed in Part C), can Support the Establishment of a Domicile and Demonstrate the Maintenance of a Residence in Texas for 12 Months

1. Title to real property in Texas

2. Marriage Certificate with documentation to support that spouse is a domiciliary of Texas

3. Ownership of business in Texas with documents that evidence the organization or the business as a partnership or corporation and reflect the ownership interest of the person or dependent’s parent.

4. State or local licenses to conduct a business or practice a profession in this state.
Part C
Documents that May be Used to Demonstrate
Maintenance of a Residence for 12 Months

These documents do not show the establishment of a domicile. They only support a person’s claim to have resided in the state for at least 12 months. Activities in Part A and B of this Chart may be used to establish a domicile.

1. Utility bills for the 12 months preceding the census date;
2. A Texas high school transcript for full senior year preceding the census date;
3. A transcript from a Texas institution showing presence in the state for the 12 months preceding the census date;
4. A Texas driver’s license or Texas ID card with an expiration date of not more than four years;
5. Cancelled checks that reflect a Texas residence for the 12 months preceding the census date;
6. A current credit report that documents the length and place of residence of the person or the dependent’s parent.
7. Texas voter registration card that has not expired.
8. Pay stubs for the 12 months preceding the census date;
9. Bank statements reflecting a Texas address for the 12 months preceding the census date;
10. Ownership of real property with copies of utility bills for the 12 months preceding the census date.
11. Registration or verification from licensor, showing Texas address for licensee;
12. Written statements from the office of one or more social service agencies, attesting to the provision of services for at least the 12 months preceding the census date.
13. Lease or rental of real property, other than campus housing, in the name of the person or the dependent’s parent for the 12 months preceding the census date.
Appendix IV

Travel and Risk-Related Activities

Release Forms

The University’s Release and Indemnification Agreement and Medical Information Release forms must be completed and signed by each student or member of the public prior to participating in University-sponsored travel or a risk-related activity (see Exhibits B4 through B4-E). There are separate forms for adults and minors and for foreign travel. In the case of a minor, the parent or guardian must sign the forms. A minor is any person who has not yet attained the age of eighteen (18). A student is any person presently enrolled in The University of Texas at Dallas.

A designated contact person in the academic or student affairs unit that is sponsoring the travel or activity must maintain the completed forms for a period of two years. When travel is involved, a Student Travel/Off-Campus Activity Checklist form (Exhibit B14-A), indicating that the required Release and Indemnification Agreements have been completed, should be attached to the unit’s copy of Student/Team/Group Travel Authorization (Exhibit B14) and must be provided to the Office of Procurement Management. (NOTE: If the travel is to a foreign country, Exhibit B14 must be approved by the President.)

In those cases where participants in the travel/activity have multiple events and the persons participating do not change, each participant may complete the Medical Information and Release form once at the beginning of a semester. Participants must update information on the form, as necessary, prior to each trip/activity.

Applicability

These policies and procedures apply to all University sponsored travel and other activities associated with high risks that involve one or more students and members of the public. In general, the applicable travel/activities may be categorized as follows:

1. Activities associated with organized courses or officially recognized independent study, either for credit (e.g., field trip courses) or non-credit.
2. Activities associated with individual work or research off-campus; e.g., co-ops, internships, student teaching, and practica.
3. Extracurricular activities including, but not limited to intramural sports, intercollegiate athletics, and similar activities.

NOTE: This policy also applies to registered student organizations if the activity or event is organized and sponsored by UTD and if travel to the activity or event is funded and undertaken using a vehicle owned or leased by UTD. Registered student organizations may not require members to travel beyond 25 miles from UTD.

Activities sponsored by an academic unit are under the purview of the Office of the Executive Vice President and Provost. Questions regarding the policies, procedures, or forms should be directed to the Vice Provost at extension 2791.

Activities sponsored by Student Affairs are under the purview of the Office of the Assistant Vice President for Student Affairs and Dean of Students. Questions regarding those activities should be directed to the Office of the Assistant Vice President for Student Affairs and Dean of Students at extension 6391.

Notifications

Students should be thoroughly informed through the catalog, the class schedule, and the course syllabus about all travel and other risk-related activities required by or associated with a credit course. For non-credit courses or programs, the course or program materials should provide this information.
Students and members of the public engaged in travel or other high-risk activities associated with the University should be informed of the nature of such risks prior to participating in the activity. An attachment to the Release and Indemnification Agreement that would be referenced on the form may be appropriate for this purpose.

Prior to each travel of other risk-related activity, the administrator of the unit sponsoring the activity must provide the Police Chief with the name of the faculty or staff member in direct charge of the activity, the name of a member of the unit not participating in the activity who can be contacted if needed, and, for travel-related activity, the names of the students and members of the public who are traveling. For the risk-related activities not involving travel, the administrator must notify the Police Chief regarding the site of the activity and the approximate number of participants. The Student/Team/Group/Travel Authorization form (Exhibit B14) and the Student Travel/Off-Campus Activity Checklist (Exhibit B14-A) are used for these notifications.

Incidents of a serious nature should be reported immediately to the administrator in charge of the sponsoring unit.

**Safety Issues and Modes of Travel**

**General**

Circumstances such as terrain, road conditions, length of trip, etc., may make it prudent that students and/or members of the public go with available group transportation rather than travel by personal vehicle. In some situations, it may be that travel with the group should be required. The faculty, staff member, and/or supervisor in charge of the travel should consider this issue as he or she would any safety matter. As with all of these issues, the use of caution and common sense are an important part of this process.

In all cases where an adult participant is permitted to choose to drive/ride in private transportation, that circumstance should be described in the Mode of Transportation line on the Release and Indemnification Agreement.

For minor participants, the key issue is giving notice to parents/guardians exactly how their child is to be transported to/from the activity. The Mode of Transportation information should provide notice. It would be best to limit the transportation of minors who are not accompanied by a parent/guardian to UTD owned/leased/rented vehicles, or vehicle driven by UTD employees acting within the scope of their employment. Such a requirement should be stated on the Release and Indemnification Agreement.

**All Motor Vehicle Travel**

The administrator of the unit sponsoring an activity involving travel for students or members of the public must ensure that the following safety precautions are followed:

1. **Seat Belts:** Occupants of motor vehicles shall use seat belts or other approved safety restraint devices as required by law at all times when the vehicle is in operation.
2. **Weapons, alcohol, and illegal substances prohibited:** Occupants of motor vehicles shall not consume, possess, or transport any weapons, alcoholic beverages, or illegal substances at any time when the vehicle is in operation.
3. **Passenger Capacity and Hours of Driving:** The total number of passengers, including the driver, in any vehicle at any time it is in operation shall not exceed the manufacturer’s recommended capacity.
   a. The distance to the destination and/or the number of participants needing transportation should determine the type of transportation to be used. On long trips, each vehicle should have a minimum of two drivers certified by the UTD Safety Officer. Drivers should rotate periodically, and no more that 10 hours of driving should be completed during any one day. Trips requiring more that 10 hours driving to reach the destination will require overnight lodging. There should be no driving between the hours of 11:00 p.m. and 6:00 a.m. without prior approval of the appropriate administrative official. Van drivers must take a thirty-minute rest break every four hours.
   b. For trips scheduled for longer than 2 hours, a navigator must be assigned to assist the driver. The navigator must stay awake while on duty.
   c. No more than nine (9) people, including the driver plus gear, should be loaded on any one 15-passenger van. The weight of the passengers and their gear should be distributed evenly throughout the van. Luggage should be placed in the rear behind the last seat and is not allowed on the roof when the van is being operated.
d. On trips where the number of participants exceeds that which can comfortably fit in two or three vans, a chartered bus should be considered. All vehicles should have access to a cellular phone, and the number should be indicated in the notification to the Police Chief.

4. Medical Insurance: Students traveling on a University-sponsored overnight trip must have medical insurance. Student health insurance is available at minimal cost through the Student Insurance Division of UICI, a local company that provides tailored health insurance programs for students enrolled in universities. Contact the representative for UTD at 469-229-6700 for information on insurance for special events such as field trips and off-campus activities. Insurance may be provided by the sponsoring office as part of the cost of the activity, or may be purchased by individual students.

5. Driver Authorization: All University employees who drive University owned vehicles or who drive a rental vehicle that is used to transport students must be certified by the UTD Safety Officer as having met the requirements of the authorization of drivers in this policy and The U.T. System Business Procedure Memorandum No. 16-05-02. This does not apply to employees who are driving rental vehicles on University business but are not transporting students. Requirements for being an authorized driver include a 36-month Motor Vehicle Record score of 2 or less, as well as appropriate driver training. Van-specific training, including on-the-road training, is required for drivers of 15-passenger vans.

6. Insurance Coverage: The U.T. System Business Procedure Memorandum No. 16-05-02 includes information, policies, and procedures regarding insurance policies covering the authorized use of owned, hired and non-owned vehicles; requirements for the safe use of vehicles; requirements for authorization of drivers; and procedures for reporting vehicle accidents or occurrences which may lead to claims. This Memorandum may be found at http://www.utsystem.edu/bpm/16.htm.

7. Valid Driver’s License: An employee who operates a University-owned, rented, leased, or personal vehicle for official University business at a time when his or her license was suspended or revoked, shall be subject to disciplinary action up to and including dismissal.

8. Emergency Procedures. Important: Copies of participant Medical Information Release forms and the Emergency Procedures Checklist must accompany the responsible faculty or staff member assigned to each vehicle for University-sponsored travel.

For University-Owned or Rental Vehicles: Accident:

- Notify local authorities @ 911.
- Notify UTD Police @ 972-883-2331 who will notify the Safety Officer, the Risk Manager, and the administrator in charge of the sponsoring unit. The need for follow-up with the participants’ emergency contact persons or others is discussed at this time.
- Leave a cellular phone number with the University Police dispatcher. For rentals, call the 800 number provided by the rental company.
- While at the scene of the accident, authorized drivers must attempt to obtain as much information as possible, including:
  - The license plate number of any vehicles at the scene;
  - The names and telephone numbers of the other parties;
  - Insurance information from the other parties involved in the accident;
  - As soon as possible, the authorized driver will provide this information to the fleet contact at extension 2249.
- Authorized drivers of the University-owned vehicles should advise other parties involved in the accident that the accident will be reported to the University's insurance company who will be in contact with the claimant.
- In the case of rental vehicles, the University has an insurance policy that becomes applicable if the cost exceeds what is covered by the rental agency's insurance policy. Authorized drivers of the University-owned vehicles should advise other parties involved in the accident that the accident will be reported to the rental agency and to the University's insurance company.
- Authorized drivers should not make any representations regarding insurance coverage to other parties involved in the accident, because the insurance company’s adjuster will make the determination of coverage available under the insurance policy. Should the other party require some type of insurance information, a copy of UTD’s insurance policy is in the glove compartment (University-owned vehicles only) or they may contact UTD’s fleet contact at 972-883-2249 for assistance.
• Upon returning to campus, the fleet contact will provide you with insurance claim forms to be filled out with all pertinent information about the accident. The fleet contact will then forward the claim form to the insurance company for handling.

**Mechanical Breakdown (University-Owned Vehicles):**
• Notify the dispatcher in the UTD Police Department @ 972-883-2331 who will the supervisor of the authorized driver.
• Contact some form of roadside assistance (local auto dealer service department, garage, etc.)
• Leave a cellular phone number for someone to call you back.
• Do not attempt to make repairs, including changing a tire. Wait for roadside assistance.

**Mechanical Breakdown (Rental Vehicles):**
• Call the 800 number provided by the rental company.
Appendix V

The University of Texas at Dallas will excuse a student from class or other required activities for the observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Property Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment.

The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.
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