UNDERGRADUATE CATALOG

2012–2014

The University of Texas at San Antonio

July 2012

The Alma Mater

"Hail UTSA"

From our hills of oak and cedar
To the Alamo,
Voices raised will echo
As, in song, our praises flow.
Hail Alma Mater!
Through the years our loyalty will grow.
The University of Texas
San Antonio.

The Mascot

The roadrunner, a bird representative of the Texas Hill Country and the Southwest, was voted the UTSA mascot in 1977.

The School Colors

Official colors of The University of Texas System are orange and white. Upon recommendation from the UTSA Student Representative Assembly, the Board of Regents approved the addition of blue to the orange and white for UTSA's school colors.

utsa.edu

The provisions of this document do not constitute a contract, expressed or implied, between any applicant, student, or faculty member and The University of Texas at San Antonio or The University of Texas System. This document is a general information publication, and it does not contain all regulations that relate to students.

The University of Texas at San Antonio reserves the right to withdraw courses at any time and to change fees, tuition, rules, calendar, curriculum, degree programs, degree requirements, graduation procedures, and any other requirement affecting students. The policies, regulations, and procedures stated in this catalog are subject to change without prior notice, and changes become effective whenever the appropriate authorities so determine and may apply to both prospective students and those already enrolled. University policies are required to be consistent with policies adopted by the Board of Regents of The University of Texas System and are in compliance with state and federal laws.

Students are held individually responsible for meeting all requirements as determined by The University of Texas at San Antonio and The University of Texas System. Failure to read and comply with policies, regulations, and procedures will not exempt a student from whatever penalties he or she may incur.

No person shall be excluded from participation in, denied the benefits of, or be subject to discrimination under any program or activity sponsored or conducted by The University of Texas System or any of its component institutions on any basis prohibited by applicable law, including, but not limited to, race, color, national origin, religion, gender, age, veteran status, or disability. Discrimination on the basis of sexual orientation is also prohibited pursuant to University policy.

University publications: The *UTSA Undergraduate Catalog* provides information about degrees offered by the undergraduate departments and lists the faculty. The chapter for each college describes the degree requirements for all majors offered by the college and lists the college's undergraduate courses. The *UTSA Information Bulletin* (http://utsa.edu/infoguide/) gives important information about academic policies and procedures that apply to all students, regardless of the catalog under which they are seeking their degree. It includes the official academic calendar, admission procedures, and residence requirements. The bulletin contains policies on grades and the grade point average, credit by examination, and scholastic probation and dismissal. This annual publication also gives historical and current information about the University's organization and physical facilities.

Academic advising: UTSA views sound academic advising as a significant responsibility in educating its students. Students are encouraged to seek academic advising to ensure that they complete degree requirements in an appropriate and timely manner. The partnership established with an academic advisor will assist students with learning about their options, degree requirements, academic policies and procedures, and appropriate University resources. This supportive, helpful relationship will enable students to plan and pursue programs that support their interests and educational goals. Two centers provide academic advising for new and transfer freshmen (under 30 semester credit hours accepted by UTSA). With the exception of Honors freshmen who are advised by the Honors College, all freshmen who have decided upon a major and UT-Austin Coordinated Admission Program (CAP) freshmen are advised through the Colleges' Freshman Advising Center. All freshman, sophomore, junior, and senior students who have not decided upon a major or have provisional status are advised through the Tomás Rivera Center for Student Success. Sophomore, junior, and senior students with college majors are advised on the Main or Downtown campuses in the respective college advising centers based on college location. On the UTSA Downtown Campus, freshmen through seniors with declared majors should contact the Downtown Undergraduate Advising Center. Prospective students can seek information about UTSA academic programs from UTSA's Visitor Center or New Student Admissions Office at either the Main Campus or Downtown Campus.

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

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Bachelor's Degree Regulations

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1. Bachelor's Degree Regulations

DEGREE REQUIREMENTS

Overall Requirements

In order to receive a bachelor's degree from UTSA, a student must meet these minimum requirements:

1. Complete a minimum of 120 semester credit hours, at least 39 of which must be upper-division level.
2. Complete the University Core Curriculum requirements outlined in this chapter.
3. Complete at least one course in the University Core Curriculum designated as a Q-course to satisfy the Quantitative Scholarship requirement.
4. Complete the major and support work requirements and the free elective requirements for the desired degree. Free electives refer to any semester credit hours accepted by UTSA in transfer or awarded by UTSA that, for degree purposes, are not applied to Core Curriculum, major, minor, or support work requirements. The only restrictions placed upon courses used as free electives are as follows:
   a. that a specific number of free elective credits must be at the upper-division level for some degree programs
   b. that a maximum of 6 semester credit hours of physical activities courses can be applied to the free electives allowed for any UTSA degree program
   c. that a maximum of 9 semester credit hours of military science can be applied to the free electives allowed for any UTSA degree program.
5. Meet all requirements for a degree as put forth by the Texas State Education Code, including the following:
   a. All students must complete 6 semester credit hours of American or Texas history.
   b. All students must complete 6 semester credit hours of government or political science, including the Constitution of the United States and constitutions of states, with special emphasis on Texas.
6. Meet the minimum UTSA residence requirements.
7. Achieve an overall 2.0 grade point average in all work attempted at UTSA and a 2.0 grade point average in all work included in the major.
8. Be in good academic standing at UTSA.
9. Apply formally for the degree before the deadline in the Office of the Registrar.

Minimum UTSA Residence Requirements

The following minimum UTSA residence requirements are in accordance with requirements established for all institutions in The University of Texas System and are requirements for all bachelor's degrees:

1. A minimum of 25 percent of the total number of semester credit hours required for a bachelor's degree must be completed at UTSA before a degree can be conferred.
2. Twenty-four of the last 30 semester credit hours applied to the degree program must be completed in residence, with the exception that among University of Texas System components, a student may, with the approval of the appropriate dean, transfer additional coursework to the program at the degree-granting institution.
3. Of the minimum 39 upper-division semester credit hours required in all degree programs, 18 must be earned in UTSA courses.
4. At least 6 semester credit hours of upper-division coursework in the major must be completed at UTSA. Additional hours in the major sequence may be required under individual UTSA degree plans.

Core Curriculum

The Core Curriculum is the part of each student's degree program in which he or she takes courses that meet requirements common to all UTSA undergraduates. Candidates for a bachelor's degree must achieve core objectives by completing the Core Curriculum. To meet the Quantitative Scholarship requirement, all candidates for a bachelor's degree must complete at least one course in the Core Curriculum designated as a Q-course in the Schedule of Classes.

Transfer of Core Curriculum Courses

In accordance with the Texas Education Code, Chapter 61, Subchapter S, the UTSA Core Curriculum consists of 42 semester credit hours of coursework. If a student successfully completes the entire core curriculum at another public institution of higher education in Texas, that block of courses may be transferred to any other public institution of higher education in Texas and must be substituted for the receiving institution's core curriculum. Students will receive academic credit for each of the courses transferred and may not be required to take additional core curriculum courses at the receiving institution unless the Texas Higher Education Coordinating Board has approved a larger core curriculum at that institution.

Students who have completed a portion of the Core Curriculum at another Texas public institution of higher education may use that coursework to satisfy UTSA Core Curriculum requirements if:

- the course is designated as meeting a Core Curriculum requirement at the institution, and
- the course fits within the UTSA Core Curriculum.

For transfer purposes, the designated Texas Common Course Numbering (TCCN) System courses will be accepted in transfer in lieu of these courses.

Students should consult with an academic advisor to determine the sequence of courses in the Core Curriculum and the major.

Students who have successfully completed the entire core curriculum at another public institution of higher education in Texas will be required to complete at least one Q-workshop to meet

the Quantitative Scholarship requirement. Q-workshops will be scheduled at different times during the academic year.

Resolution of Transfer Disputes for Core Curriculum Courses

Public institutions of higher education must follow these procedures 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, the receiving institution will give written notice to the student and to the sending institution that the transfer of course credit is denied. At the request of the sending institution, the receiving institution will also provide written notice of the reasons it denied credit for a particular course or set of courses.
2. A student who receives notice 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 Texas Higher Education Coordinating 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 institution that denied the course credit for transfer will notify the Commissioner of Higher Education of its denial and the reasons for the denial.
5. The commissioner or the commissioner's designee will make the final determination about the transfer of course credit and give written notice of the determination to the involved student and institutions.

The Texas Higher Education Coordinating Board will collect data on the types of transfer disputes and the disposition of each case the commissioner considers.

If a receiving institution believes that a course which a student presents for transfer is not of acceptable quality, it should first contact the sending institution and try to resolve the problem. If the two institutions cannot come to a satisfactory resolution, the receiving institution may notify the Commissioner of Higher Education, who may investigate the course. If its quality is found to be unacceptable, the Texas Higher Education Coordinating Board may discontinue funding for the course.

Goals of the Core Curriculum

The Core Curriculum reflects the educational goals of the University. It is designed to enable students to assess the perspectives and accomplishments of the past and to move to the future with an informed and flexible outlook. It promotes intellectual adaptability, ethical awareness, and transfer among diverse modes of thought.

An essential aim of the Core Curriculum is to cultivate the verbal, numerical, and visual skills necessary to analyze and synthesize information, construct arguments, and identify and solve problems. Another essential aim is to foster understanding of the intellectual and cultural pluralism of modern society as it is reflected in natural science and mathematics; behavioral, cultural, and social science; and literature and artistic expression. By encouraging interdisciplinary study, the Core Curriculum seeks to develop critical awareness of the continuities and discontinuities of human thought, history, and culture, thus helping prepare students to meet the demands of change.

The University has recently added a quantitative scholarship requirement designed to enhance quantitative reasoning and critical thinking skills. In keeping with the educational goals of the University, this requirement will help students understand and evaluate data, assess risks and benefits, and make informed decisions in all aspects of their lives.

The University reviews Core courses for their success in promoting the goals of the Core, and it encourages students to select Core courses that will best achieve these goals. Beyond the Core, each student must fulfill the requirements of a major.

Expectations for Entering Students

The Core Curriculum is built on the assumption that the foundations of the general part of a student's education are laid in secondary school. Appropriate levels of proficiency in important subjects have been established as prerequisites for many of the courses in the Core, especially in the areas of rhetoric, mathematics, and language. Students who are unable to demonstrate proficiency may be required to take additional coursework before qualifying to take courses that meet Core Curriculum requirements. Entering students are also expected to possess proficiency in reading, knowledge of research and library tools, and a familiarity with basic computer skills. Students unable to demonstrate such proficiency and knowledge may be required to enroll in noncredit programs developed by UTSA to correct deficiencies in these areas.

Core Curriculum Component Area Requirements

COMMUNICATIONS (010) (6 semester credit hours)

To achieve the objectives of the Communications component area, students must demonstrate competent writing in English; critical proficiency in oral and graphic communication; competence in constructing valid arguments and criticizing arguments; and critical proficiency in using diverse theoretical perspectives to identify and formulate problems and draw conclusions.

Students must complete the following courses, for a total of 6 semester credit hours:

English Rhetoric/Composition

WRC 1013 Freshman Composition I
WRC 1023 Freshman Composition II

MATHEMATICS (020) (3 semester credit hours)

Students must demonstrate knowledge of higher mathematics sufficient to understand the basis of mathematical reasoning. Students will typically complete this requirement in 3 semester credit hours of coursework.

Students must complete one course (3 semester credit hours) from the following or another mathematics or statistics course at an equivalent or more advanced level:

MAT 1023 College Algebra with Applications
MAT 1033 Algebra with Calculus for Business
MAT 1043 Introduction to Mathematics

MAT	1073	Algebra for Scientists and Engineers
STA	1043	Introduction to Quantitative Reasoning
STA	1053	Basic Statistics

NATURAL SCIENCES (030) (6 semester credit hours)

Students must demonstrate knowledge of the methods, intellectual approaches, social significance, and history of the physical and natural sciences. Students will typically complete the requirements in 6 semester credit hours of coursework.

Students must complete two courses from the following lists. At least one course must be chosen from Level Two. Level Two science courses are more rigorous than those in Level One.

Level One

ANT	2033	Introduction to Physical Anthropology
ANT	2043	Introduction to Archaeology
BIO	1233	Contemporary Biology I
BIO	1404	Biosciences I
CHE	1033	Chemistry in Our Daily Lives: A Pathway to Scientific Literacy
CHE	1073	Basic Chemistry
ES	2013	Introduction to Environmental Systems I
GEO	1013	The Third Planet

Level Two

AST	1013	Introduction to Astronomy
AST	1033	Exploration of the Solar System
BIO	1243	Contemporary Biology II
BIO	1413	Biosciences II
CHE	1103	General Chemistry I
CHE	1113	General Chemistry II
GEO	1103	Introduction to Earth Systems
GEO	1123	Earth History
GRG	2613	Physical Geography
PHY	1013	Universes
PHY	1603	Algebra-based Physics I
PHY	1623	Algebra-based Physics II
PHY	1903	Engineering Physics I
PHY	1923	Engineering Physics II
PHY	1943	Physics for Scientists I
PHY	1963	Physics for Scientists II

HUMANITIES & VISUAL AND PERFORMING ARTS (6 semester credit hours)

Students should demonstrate an understanding of the conceptual approaches and history of at least one of the arts, as a means of comprehending the aesthetic patterns that underlie human creativity; and an understanding of literary concepts and contemporary trends in interpretation, as a means of comprehending the metaphoric or analogical potential of human language.

A. ***Literature, philosophy, modern or classical language/literature and cultural studies (040)*** (3 semester credit hours)

Students must complete one of the following courses:

CLA	2033	Introduction to Classical Literature
CLA	2323	Classical Mythology
CSH	1103	Literary Masterpieces of Western Culture I
CSH	1113	Literary Masterpieces of Western Culture II
CSH	2313	Introduction to Literary Studies
ENG	2013	Introduction to Literature
ENG	2213	Literary Criticism and Analysis
ENG	2383	Multiethnic Literatures of the United States
ENG	2423	Literature of Texas and the Southwest
FRN	2333	French Literature in English Translation
GER	2333	German Literature in English Translation
IDS	2303	World Literature I: Through the Sixteenth Century
IDS	2313	World Literature II: Since the Sixteenth Century
ITL	2333	Italian Literature in English Translation
RUS	2333	Russian Literature in English Translation
SPN	2333	Hispanic Literature in English Translation

B. ***Visual and Performing Arts (050)*** (3 semester credit hours)

Students must complete one of the following courses:

AHC	1113	Survey of Art and Architecture from Prehistoric Times to 1350
AHC	1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750
AHC	1133	Survey of Modern Art
ARC	2413	History of Architecture: Prehistory through Medieval
ARC	2423	History of Architecture: Renaissance through Nineteenth Century
ART	1103	Introduction to Visual Arts
ART	1143	Art for Non-Art Majors
BBL	2023	Latino Cultural Expressions
MAS	2023	Latino Cultural Expressions
MUS	2243	World Music in Society
MUS	2623	Fundamentals of Music for the Non-Music Major
MUS	2633	American Roots Music
MUS	2663	History and Styles of Jazz
MUS	2673	History and Styles of Rock
MUS	2683	Masterpieces of Music
MUS	2743	Music and Film

SOCIAL AND BEHAVIORAL SCIENCES (18 semester credit hours)

Students must demonstrate critical understanding of the political and economic dimensions of social life; knowledge of U.S. history sufficient for understanding current developments in American society within a historical context; substantial knowledge of social, racial, cultural, and gender diversity in the United States and Texas; and knowledge of the history, theory, methods, and intellectual approaches of the social and behavioral sciences, including similarities and differences with respect to one another and to other modes of understanding.

Students typically fulfill the requirements in 18 semester credit hours of coursework.

A. ***United States History and Diversity (060)*** (6 semester credit hours)

Each student must complete two of the following courses for a total of 6 semester credit hours. In meeting this requirement, students fulfill the statutory requirement in United States or Texas history.

HIS	1043	United States History: Pre-Columbus to Civil War Era
HIS	1053	United States History: Civil War Era to Present
HIS	2053	Texas History

B. ***Political Science (070)*** (6 semester credit hours)

Students must complete the following courses to fulfill the statutory requirement in United States and Texas government:

POL 1013 Introduction to American Politics

and one of the following:

POL	1133	Texas Politics and Society
POL	1213	Topics in Texas and American Politics

Note: Students who have passed the Advanced Placement (AP) examination in American Government (with a score of 3 or better) will receive 3 semester credit hours of AP credit in American government, equivalent to POL 1013 Introduction to American Politics. Students may request that this examination be used to satisfy 3 hours of the UTSA six-hour Core Curriculum requirement in Political Science, after they have completed POL 1133 Texas Politics and Society.

Students who pass the College Level Examination Program (CLEP) examination in American Government will receive 3 hours of credit in American government, equivalent to POL 1013 Introduction to American Politics. Students may request that this examination be used to satisfy 3 hours of the UTSA six-hour Core Curriculum requirement in Political Science, after these students have completed POL 1133 Texas Politics and Society.

C. ***Social and Behavioral Science (080)*** (3 semester credit hours)

Students must complete one of the following courses:

AMS	2043	Approaches to American Culture
ANT	1013	Introduction to Anthropology
BBL	2003	Language, Culture, and Society
BBL	2033	Cultures of the Southwest
COR	1203	Freshman Seminar
CRJ	1113	The American Criminal Justice System
CRJ	2813	Introduction to Courts and the Legal System
GRG	1013	Fundamentals of Geography
GRG	2623	Human Geography
IDS	2113	Society and Social Issues
PSY	1013	Introduction to Psychology
SOC	1013	Introduction to Sociology
SOC	2013	Social Problems
SOC	2023	Social Context of Drug Use

D. ***Economics (081)*** (3 semester credit hours)

Students must complete one of the following courses:

ECO	2003	Economic Principles and Issues
ECO	2013	Introductory Macroeconomics
ECO	2023	Introductory Microeconomics

WORLD SOCIETY AND ISSUES (090) (3 semester credit hours)

Students should demonstrate intellectual flexibility, explore the bridges and barriers among various forms of understanding, and understand the nature and limits of different ways of knowing and different academic fields. Students should obtain a broad acquaintance with the cultures of major portions of the world (including non-Western cultures), knowledge of the contexts of international relations, and knowledge of world geography.

Students will typically fulfill the requirements by completing 3 semester credit hours of coursework from the following:

ANT	2053	Introduction to Cultural Anthropology
ANT	2063	Language, Thought, and Culture
ARA	1014	Elementary Arabic I
ARC	1413	Architecture and Culture
ARC	1513	Great Buildings and Cities of the World
ASL	1013	American Sign Language: Basic I
BIO	1033	Drugs and Society
CHN	1014	Elementary Chinese I
COM	2343	Introduction to Mass Communication
CS	1023	Cultural Implications of the Information Society
CSH	1203	Introduction to Hispanic Cultures
CSH	1213	Topics in World Cultures
CSH	2113	The Foreign Film
FRN	2013	Intermediate French I
FRN	2023	Intermediate French II
GER	2013	Intermediate German I
GER	2023	Intermediate German II
GRG	1023	World Regional Geography
GRK	2113	Intermediate Classical Greek I
HIS	2123	Introduction to World Civilization to the Fifteenth Century
HIS	2133	Introduction to World Civilization since the Fifteenth Century
HIS	2533	Introduction to Latin American Civilization
HIS	2543	Introduction to Islamic Civilization
HIS	2553	Introduction to East Asian Civilization
HIS	2573	Introduction to African Civilization
HIS	2583	Introduction to South Asian Civilization
HUM	2093	World Religions
IDS	2203	World Civilization to the Fifteenth Century
IDS	2213	World Civilization since the Fifteenth Century
ITL	1014	Elementary Italian I
JPN	1014	Elementary Japanese I
LAT	2113	Intermediate Latin I
LAT	2123	Intermediate Latin II
MUS	2693	The Music of Latin America and the Caribbean
PHI	2123	Contemporary Moral Issues
RUS	1014	Elementary Russian I
SPN	2003	Spanish for Elementary Education
SPN	2013	Intermediate Spanish I
SPN	2023	Intermediate Spanish II
SPN	2513	Spanish for Special Purposes
SPN	2523	Hispanic Culture and Communication
WS	2013	Introduction to Women's Studies

Catalog of Graduation

Students have seven years from their term of original registration to complete a degree program under the catalog in effect when they initially registered. A student may choose a subsequent catalog under which to complete graduation requirements, provided the student has completed at least one course during a semester in which the selected catalog was in effect with a letter grade other than "W," "NR," or "F." The student must complete all degree requirements under the subsequent catalog. Choosing a new catalog begins a new seven-year time limit. Students who graduate under one catalog and begin a second degree must begin the new degree under the catalog in effect at that time. A student must have an approved catalog at the time an application for graduation is filed.

Multiple Degrees

Pursuing One Degree Covering More Than One Major

A student completing one type of baccalaureate degree at UTSA (i.e., Bachelor of Arts, Bachelor of Science) may elect to concurrently complete other majors of that type. In such cases, only one bachelor's degree, which includes all majors, is awarded.

If a student wishes to pursue more than one major, all requirements for a single degree and major, plus the additional requirements for the other major(s), must be completed. It is unlikely that a student fulfilling more than one major can complete all requirements within the same number of semester credit hours required for a single major.

Pursuing Two Degrees Concurrently

Students pursuing degrees of different types (i.e., a Bachelor of Arts and a Bachelor of Science) at the same time must satisfy the specific catalog requirements for each degree. Courses common to both degree programs (such as Core Curriculum requirements) may be counted toward the requirements for each degree. Additional courses required in one degree program may be used as free or directed electives in the other degree program.

Pursuing Additional Degrees after Graduation

A student holding a baccalaureate degree from UTSA or another accredited institution may receive an additional bachelor's degree from UTSA as long as it is in a different major (regardless of the concentration) or minor. Such a student continues to be classified as an undergraduate and must:

1. complete a minimum of 30 semester credit hours of UTSA courses (of which at least 12 hours must be at the upper-division level in the major field) for each baccalaureate degree sought beyond the first
2. complete all requirements for the additional major(s), as set forth in this catalog
3. complete all requirements for the additional degree(s), including grade-point-average requirements, Core Curriculum requirements, support courses, elective courses, and upper-division courses, as set forth in this catalog
4. complete requirements under the catalog in effect at the time of beginning the second degree.

MINORS

UTSA offers formal minors in a variety of disciplines and in several interdisciplinary fields. To receive a minor, students must complete at least 18 semester credit hours, including 6 hours at the upper-division level at UTSA, and must achieve a grade point average of at least 2.0 (on a 4.0 scale) on all work used to satisfy the requirements of a minor. Additional semester credit hours in the minor sequence may be required under individual UTSA degree plans. Students who declare minors must graduate under a catalog that includes minors and must meet any additional requirements listed in that catalog. All requirements for the minor must be met at graduation; a minor cannot be added to a student's degree program once he or she graduates. Declaration of a minor is voluntary. To declare a minor, a student must file a Change of Major or Degree Information form through the College Advising Center of the desired minor. Students may not formally minor in more than two fields. Descriptions of minor requirements are included in chapters 3–11 of this catalog.

BACHELOR OF APPLIED ARTS AND SCIENCES

The University of Texas at San Antonio offers a Bachelor of Applied Arts and Sciences (B.A.A.S.) degree for all students who have graduated from a regionally accredited community college with an Associate of Applied Science (A.A.S.) degree in one of various technical areas. The degree program has a high standard of quality and a structure of courses that will build on students' initial two years of higher education to earn a baccalaureate degree. Students seeking a B.A.A.S. degree will be able to pursue the following professional program at UTSA:

> B.A.A.S. in Infancy and Childhood Studies offered by the Department of Interdisciplinary Learning and Teaching in the College of Education and Human Development.

All prospective B.A.A.S. student inquiries should be made to the College of Education and Human Development Advising Center. The program is designed for students who have earned an Associate of Applied Science degree from a regionally accredited community college. If the A.A.S. degree does not cover related background coursework for the B.A.A.S., students may be required to take leveling or prerequisite coursework determined in consultation with a College of Education and Human Development academic advisor and the department chair. Students may transfer up to 78 semester credit hours from a community college to UTSA for the B.A.A.S. degree, upon the discretion of the college dean. However, vocational-technical coursework and community college credits in excess of 66 hours will only apply to the Bachelor of Applied Arts and Sciences degree.

The minimum number of hours required for the degree is 120. Requirements include:

1. 36 semester credit hours in an organized technical program completed at a community college
2. 42 semester credit hours of Core Curriculum courses
3. 33 semester credit hours of major courses
4. 9 semester credit hours of support courses

Students who meet UTSA admission requirements are accepted conditionally for the Bachelor of Applied Arts and Sciences program of the College of Education and Human Development. Once

confirmation of the earned A.A.S. degree through an official transcript has been received and upon consultation with the college advising center, students are accepted into the Bachelor of Applied Arts and Sciences degree program.

The degree represents advanced academic education which augments and advances prior applied and technical training. Although there may be some similarity between this degree and other academic offerings, they are in actuality different programs of study. As such, the above-listed B.A.A.S. degree program does not lead directly to teacher certification (though these students would be eligible for post-baccalaureate certification programs). Students interested in teacher certification should consult an advisor in the College of Education and Human Development for specific requirements.

This degree program is not available to students who have not already completed an approved A.A.S. degree.

TRANSFERRING COURSES

To prevent unnecessary loss of time and credit, prospective transfer students are encouraged to research as early as possible UTSA's admission policies and degree requirements in their areas of interest. Questions regarding the transferability of courses should be addressed to the Office of Admissions.

Students attending community colleges should also note the core curricula designed and adopted by the Texas Higher Education Coordinating Board to simplify the transfer of credit. Copies of these core curricula are available through most community college counselors.

Evaluation Procedures

An official evaluation of transfer credit is completed for degree-seeking applicants at the time of admission. This evaluation shows the equivalency of courses completed elsewhere to courses at UTSA and indicates their applicability to the UTSA Core Curriculum. Students may access their evaluations on *ASAP* (Automated Student Access Program).

At institutions across the state, the Texas Higher Education Coordinating Board has approved core curricula in the following areas: arts and sciences (including mathematics and natural sciences), business administration, engineering, art, and criminal justice. Although the courses in these core curricula at various institutions may not be precisely equivalent to courses in the *UTSA Undergraduate Catalog*, students who have successfully completed the core curricula at other institutions are given full credit toward the appropriate degree at UTSA.

Students who do not receive transfer credit for specific courses may review the policies for credit by examination or contact the Office of Admissions. Grades earned at other institutions are not averaged with grades earned at UTSA to determine a student's grade point average.

Resolution of Transfer of Credit Disputes

The Texas Higher Education Coordinating Board has established the following procedure for Texas public colleges and universities to follow in resolving transfer of credit disputes for lower-division courses. (The individual courses covered by this procedure are defined by the Coordinating Board's guides: "Transfer of Credit Policies and Curricula" and "Common Course Numbering System Guide.")

If a transfer course covered by the Coordinating Board policy is not accepted in transfer to UTSA, the student should contact the Office of Admissions for further explanation. The Office of Admissions, the student, and the sending institution will attempt to resolve the transfer of course credit in accordance with Coordinating Board rules.

If the transfer credit question is not resolved satisfactorily in the opinion of the student or the sending institution within 45 days of notification, the Office of Admissions states the reasons for the course denial to the Commissioner of Higher Education. The commissioner or a designee then provides a final written decision about the transfer course(s) in question to UTSA, the student, and the sending institution.

Course Types and Acceptability

Undergraduate college credits completed at other U.S. institutions are evaluated for transfer to UTSA by the Office of Admissions on the basis of UTSA equivalency tables and according to the guidelines in this section. Generally, all work transferred must be from a college or university accredited by a regional accrediting association (see section below for information about credit from a non-accredited institution).

Credits completed at institutions outside the United States must be evaluated on an individual basis, at the student's expense, by the foreign credentials evaluation service designated by the Office of Admissions. Transfer credit from foreign institutions is accepted by UTSA on the basis of this evaluation.

Generally Accepted

Courses from an Accredited College or University. Any academic course from an accredited college or university in which a passing grade has been earned is accepted for transfer credit if it meets all other criteria in this section. Only those hours that apply toward a specific baccalaureate degree program count toward minimum degree requirements.

The applicability of particular courses completed at other institutions toward specific course requirements for a bachelor's degree at UTSA depends upon equivalency of such courses offered by UTSA. Other academic courses are transferred as electives; credit for these courses counts toward minimum degree requirements only if they satisfy requirements of the student's degree program. Credit is not given for duplication or repetition of courses.

All course requirements at UTSA designated as upper-division may be transferred to UTSA only from senior-level institutions. For credit to be transferred as an upper-division course, the institution where credit was earned must be an accredited senior-level institution, and the course must be described in the institution's catalog as being upper-division.

If the equivalent of a required upper-division UTSA course is completed at an accredited institution as a lower-division course, the course need not be repeated, but another upper-division course, approved by the student's advisor, must be completed at UTSA in substitution.

Credit by Examination. Credit by examination awarded at another accredited college or university transfers if the institution equates the results of the examination to a specific course, the course is transferable, and it appears on the institution's official transcript. Such credit is subject to all other transfer provisions, including the 66-semester-credit-hour transfer limitation from community colleges.

Accepted on a Limited Basis

Physical Activities Courses. Credits earned for physical activities courses can be transferred as free elective credit up to a maximum of 6 semester credit hours.

Extension or Correspondence Courses. Credit earned by extension or correspondence through accredited colleges and universities for college-level academic courses is evaluated and accepted for transfer if the course is equivalent to UTSA courses and acceptable to the student's degree program and if all other transfer provisions in this section are met. However, the maximum credit accepted through a combination of extension and correspondence courses is 30 semester credit hours (18-semester-credit-hour maximum by correspondence). No more than 6 semester credit hours of correspondence credit may be applied to the major.

Students currently enrolled at UTSA are not typically permitted to take correspondence or extension courses and transfer the credit to UTSA. Exceptions to this rule must be approved by the student's advisor and dean, and such courses can be taken only in the event that the student is about to graduate and cannot obtain the course in residence.

Community College Courses. Transfer credit for community college work may not exceed 66 semester credit hours. Students who have completed more than 66 acceptable semester credit hours may apply specific completed, transferable courses to specific course requirements to avoid having to repeat the courses. The semester credit hours for additional courses may not be applied toward the minimum semester credit hour requirements for a baccalaureate degree.

No upper-division credit may be earned at a community college.

Military Service Training School Courses. As a Serviceman's Opportunity College (SOC) institution, UTSA awards credit on a limited basis for military coursework. In order for credit to be awarded, a student submits to UTSA an official Army/American Council on Education Registry Transcript System (AARTS) or an official Sailor/Marine/Ace Registry Transcript (SMART) listing all military coursework completed. The Office of Admissions evaluates the transcript and determines the transferability of coursework. Credit is awarded for military coursework that is deemed parallel to academic coursework. Credit is not awarded for military experience based upon a Military Occupational Specialty (MOS) or for coursework that is solely technical in nature. Awarding of credit for military coursework does not guarantee its applicability to a degree at UTSA. A student who has taken military courses that do not transfer may challenge by examination those UTSA courses that appear equivalent to those already completed (see Challenging a UTSA Course in "General Academic Regulations" of the *UTSA Information Bulletin*).

Credit for ROTC or military science, when awarded by another accredited college or university, is accepted by UTSA as free elective credit within the limitations of the student's degree program (for a maximum of 9 semester credit hours). See individual degree requirements and the ROTC program requirements in this catalog for limits on military science courses as free electives.

Credit for Military Service. An institution of higher education shall award to an undergraduate student who is admitted to the institution, including a student who is readmitted after withdrawing to perform active military service (Texas Education Code, Section 51.9242), course credit for all physical education courses required by the institution for an undergraduate degree and for additional semester credit hours, not to exceed 12, that may be applied to satisfy any elective course requirements for the student's degree program for courses outside the student's major or minor if the student:

1. graduated from a public or private high school accredited by a generally recognized accrediting organization or from a high school operated by the United States Department of Defense; and
2. is an honorably discharged former member of the armed forces of the United States who has completed at least two years of service in the armed forces or was discharged because of a disability.

Veterans entering UTSA as undergraduate students should meet with an academic advisor to discuss military service credit options, as elective credits may affect eligibility for the tuition rebate program and the Texas B-On-Time Loan forgiveness program or result in additional tuition for excess credit hours. Students must provide proof of eligibility (i.e., DD Form 214 or disability discharge documentation) to the academic advisor and complete the Military Service Credit Notice with the academic advisor. The Military Service Credit Notice is available on the Office of the Registrar's Web site (http://utsa.edu/registrar/) and in the UTSA Veterans Certification Office (McKinney Humanities Building, Room 3.01.26).

Courses from an Institution Undergoing Accreditation or a Nonaccredited Institution. Credits earned in colleges and universities that are candidates for accreditation may be considered for transfer to UTSA on an individual basis and as applicable to the student's degree program. Any such credit accepted in transfer must be validated by 30 semester credit hours of coursework in residence at UTSA, with a grade point average of 2.0 or higher in that work.

UTSA reserves the right to refuse recognition of credit from a college or university that is a candidate for accreditation or from a nonaccredited institution.

Not Accepted*

Developmental Education, Orientation, Life Experience, High School Level, Below-Algebra Mathematics, or Vocational-Technical Courses. Credits for developmental education, orientation, life experience, high school level, mathematics below the college algebra level, or vocational-technical courses are not acceptable for transfer credit. Where vocational-technical courses support a student's degree program, the student may make a written request to the Dean of the college to approve those courses as free elective credit. No transfer credit is granted for the General Educational Development (GED®) test.

*Exception – Vocational-Technical Credits earned as part of an Associate of Applied Science degree from a regionally accredited school are accepted only for the Bachelor of Applied Arts and Sciences degree program.

ENROLLMENT IN GRADUATE COURSES

For Undergraduate Credit

An undergraduate student with a cumulative grade point average of 3.0 or higher may enroll in graduate courses and apply the credits earned to an undergraduate degree after obtaining approval from the student's advisor, the instructor, the Graduate Advisor of Record, and the Dean of the college in which the course is offered. Approval forms are available in the deans' offices, the Enrollment Services Center, and on the Office of the Registrar's Web site (http://utsa.edu/registrar/). All approvals must be obtained and the form filed by the time of registration. Students are encouraged to begin collecting the appropriate authorizations before the start of the registration period.

For Graduate Credit

An undergraduate student with a cumulative grade point average of 3.0 or higher and lacking no more than 12 semester credit hours for graduation may enroll in a graduate course and earn graduate credit under the following conditions:

1. All hours required for the student's undergraduate degree must be completed in the term in which the graduate course is being taken.
2. In order to earn graduate credit, the student must graduate at the end of the semester in which the course(s) is taken; otherwise, the course(s) counts as undergraduate credit.
3. If graduate credit is earned, the semester credit hours are not considered part of the baccalaureate degree program.
4. The student must obtain permission from the student's advisor and the Dean of the college in which the course(s) to be taken is offered. Approval forms are available in the deans' offices, the Enrollment Services Center, and on the Office of the Registrar's Web site (http://utsa.edu/registrar/). The form must be filed by the time of registration. Students are encouraged to begin seeking appropriate authorizations before the registration period.

An undergraduate student with a cumulative grade point average of 3.0 or higher and lacking no more than 30 semester credit hours for graduation may enroll in a graduate course and earn graduate credit under the following conditions:

1. The student is in good academic standing in an accelerated bachelor's/master's degree program or is in good academic standing in the Honors College.
2. If graduate credit is earned, the semester credit hours are not considered part of the baccalaureate degree program.
3. The student must obtain permission from the student's advisor, the instructor, the Graduate Advisor of Record, and the Dean of the college in which the course(s) to be taken is offered. Approval forms are available in the deans' offices, the Enrollment Services Center, and on the Office of the Registrar's Web site (http://utsa.edu/registrar/). The form must be filed by the time of registration. Students are encouraged to begin seeking appropriate authorizations before the registration period.

GRADUATION

Graduation Dates

Degrees are awarded at the end of each Fall, Spring, and Summer semester. Commencement ceremonies are held in December and May at the end of the Fall and Spring semesters. Undergraduate students who graduate at the end of the Summer Semester may participate in either the May or the December commencement ceremony.

Information regarding Graduation and Commencement is available at http://utsa.edu/registrar/graduation.cfm.

Applying for the Degree

It is the student's responsibility to officially apply for his or her degree by submitting an Application for Graduation online through *ASAP*. Students must have earned at least 90 semester credit hours to apply online for graduation. Students must read and follow instructions carefully to ensure the application is accurate and successfully submitted. When the application has been accepted, students receive a confirmation number. Students having problems submitting the application should contact Graduation Coordination at graduationcoordination@utsa.edu.

While enrolled at UTSA, students who attend other colleges are required to submit official academic transcripts to the Office of Admissions from every college attended at the end of the semester during which coursework was undertaken, even if courses have been withdrawn. This includes concurrent enrollment while attending UTSA. Failure to do so may result in the rejection of the graduation application, cancellation of enrollment, permanent dismissal from UTSA, or other appropriate disciplinary action.

The following are deadlines for submitting an application for graduation:

- April 15 for Fall Semester graduation
- November 15 for Spring Semester graduation
- June 15 for Summer Semester graduation
  - Summer candidates wishing to participate in the May ceremony must apply by February 15.

Students applying to graduate with multiple degrees, majors, concentrations, and/or minors may not apply online; they must download and print the application from the Office of the Registrar Student Forms Web page (http://utsa.edu/registrar/forms.html), then submit the completed application to the Enrollment Services Center.

The advising center(s) of the college in which the student is enrolled is responsible for auditing the student's degree plan. Students must apply one semester prior to the intended graduation semester to ensure that all degree requirements are met. Students should contact the college advising center of their major for more information.

If all University-wide and degree program requirements have been satisfied, an undergraduate student is not required to be registered for classes during the semester in which they apply for graduation.

Letters of Degree Completion are prepared by the student's college advising center up to the close of the end of the term in which all degree requirements have been met.

Degrees are posted to transcripts within 30 days of the End of Term date for the semester of graduation and diplomas are mailed within 45 days of the End of Term.

Degree Verification

Graduation verification is a two-step process.

1. The college advising center of the student's degree/major/minor does a preliminary verification. The student is responsible for completing all coursework and submitting any or all of the following to his or her college advising center ***by the end of the term*** (see the Academic Calendar for End of Term dates) in which graduation is expected:

    - Outstanding transcripts
    - CLEP, AP, and IB credit
    - Petitions or substitutions
    - Change of major/minor
    - Change of catalog

2. A final degree verification occurs once all grades are posted for the graduation semester; the degree plan is reviewed by the student's college advising center once again and the college Dean authorizes the certification for graduation.

Students who apply for the degree in a given semester but do not fulfill all requirements must file a new Application for Graduation on or before the appropriate deadline for the next semester in which they intend to graduate.

Applying for a Certificate

It is the student's responsibility to apply for his or her certificate by submitting a completed Application for Undergraduate Certificate to the Enrollment Services Center prior to the last day of the semester of graduation. The application form is located at http://utsa.edu/registrar/forms.html. Students with questions about the application should contact Graduation Coordination at graduationcoordination@utsa.edu.

Graduation with University Latin Honors

See the current issue of *UTSA Information Bulletin* (http://utsa.edu/infoguide/) for Graduation with University Latin Honors criteria.

PREPROFESSIONAL COURSES OF STUDY IN LAW, BUSINESS, OR MEDICINE

Students interested in legal, business, medical, dental, nursing or other health professions careers are encouraged to select undergraduate courses of study that comply with the specific program requirements of professional schools. Students planning to apply to graduate professional programs should consult UTSA faculty with experience in and knowledge of those professional fields. Students planning to apply to a health professions program should consult an advisor at the UTSA University Health Professions Office.

As a general guide, minimum requirements are set forth below. However, satisfactory completion of these minimums does not guarantee admission to any professional school or program. Specific professional schools may have more specialized requirements, and the selection process for admission to professional schools is highly competitive.

Preparation for Law School

Students interested in preparing for and gaining admission to law school should contact the UTSA Institute for Law and Public Affairs or one of UTSA's pre-law faculty advisors. Most law schools do not recommend that pre-law students major in or concentrate on any particular area or discipline, although they do recommend that students acquire and develop certain skills as undergraduates, including strong analytical and writing skills. Most law schools say that a broad, diverse, liberal undergraduate education is preferable to one that is narrowly specialized or vocational. Many schools look for a showing of thorough, dedicated learning in a broad academic field. Student programs of study that approach subjects on a theoretical level, rather than concentrating exclusively on practical aspects, are often considered good preparatory training for law school. It is also advisable, however, for students to take some law-oriented courses at the undergraduate level to assess for themselves, and to demonstrate to law schools, their aptitude for legal studies and potential for success in law school.

To discover what a particular law school recommends, students should review that school's catalog or Web site. Students will find a wealth of information on law school admissions and preparation at the Law School Admission Council's Web site (http://lsac.org) and the UTSA Institute for Law and Public Affairs Web site (http://utsa.edu/ilpa/). The Institute offers a minor in Legal Studies (LGS) and an intensive Summer Law School Preparation Academy that pre-law students may consider. Students who wish to discuss pre-law curriculum or their law school plans should contact the Institute. To declare a Minor in Legal Studies, contact the College of Liberal and Fine Arts Undergraduate Advising Center.

Preparation for Graduate Study in Business

Nonbusiness majors interested in pursuing a Master of Business Administration (M.B.A.) degree are encouraged to take business courses as electives which may result in some M.B.A. required leveling courses being waived. For more information, contact the advising office for the M.B.A. program.

Preparation for Health Professions Programs

The University Health Professions Office (UHPO) provides advising and support to students interested in pursuing careers in the health professions. This includes academic preparation at the undergraduate level, as well as information about health careers, application procedures, and entrance exams. UTSA offers courses that fulfill entrance requirements to most health professions fields, including Medicine and Dentistry, Nursing, Dental Hygiene, Respiratory Therapy, Occupational Therapy, Physical Therapy, Physician Assistant, Pharmacy, Veterinary Medicine, Clinical Laboratory Sciences, Cytogenetics, Podiatry, Chiropractic, and Optometry. Admission to professional schools is highly competitive and involves a separate application process. Admission to UTSA does not guarantee admission into health professions programs at The University of Texas Health Science Center at San Antonio (UTHSCSA).

Students are encouraged to seek advice and consult with the UHPO advising staff early in and throughout their college career. The UHPO is located at the Main Campus (Multidisciplinary Studies Building, Room 3.02.10). Advising is also available at the Downtown Campus on selected days and times throughout the academic year. For more information about the UHPO, including appointment schedules, call (210) 458-5185, or visit the Web site at http://utsa.edu/healthprofessions/.

Medical and Dental Schools. In general, medical and dental school admissions committees do not state a preference about an undergraduate major field, leaving the student free to choose a degree program suited to the student's special abilities and interests. The vast majority of entrants have completed four years of college with a baccalaureate degree. In exceptional cases, students with outstanding records and a high degree of maturity are admitted to medical or dental school after completing 90 semester credit hours.

Admission requirements for Texas medical and dental schools are representative of admission requirements for most American medical schools. These requirements typically include one year of college English; two years of biology as required for college science majors (one year must include laboratory work); one year of physics as required for college science majors, including laboratory; one year of general chemistry and one year of organic chemistry as required for college science majors, including the corresponding laboratories; and one semester of college calculus or statistics (not required for dental school).

Applicants to medical school must take the Medical College Admission Test (MCAT). It is to a student's advantage to take the test early—no later than June, preceding the senior year)—and to begin preparation for the exam at least six months in advance. Similarly, applicants to dental school should take the Dental Admission Test (DAT) early—no later than June, preceding the senior year. The application cycle for both medical and dental schools begins in May for admission in August of the following year.

Applications for all Texas medical and dental schools, with the exception of Baylor College of Medicine, are processed by the Texas Medical and Dental Schools Application Service (TMDSAS), 702 Colorado Street, Suite 6.400, Austin, Texas 78701 (www.utsystem.edu/tmdsas/). Application services for other health professions schools as well as out-of-state medical and dental schools are: Osteopathic Medicine – American Association of Colleges of Osteopathic Medicine Application Service (AACOMAS); Podiatric Medicine – American Association of Colleges of Podiatric Medicine Application Service (AACPMAS); Dentistry – Associated American Dental Schools Application Service (AADSAS); and Allopathic Medicine – American Medical College Application Service (AMCAS), which includes Baylor College of Medicine.

Nursing School. Admission requirements for The University of Texas Schools of Nursing are representative of admission requirements for most other American nursing schools. A minimum of 62 semester credit hours is required, including 6 semester credit hours of college English, 9 hours of behavioral sciences, 6 hours of history and government, 3 hours of college mathematics, 3 hours of statistics, 3 hours of humanities, 3 hours of visual and performing arts, and 23 hours of natural sciences which must include chemistry, anatomy, physiology, microbiology, and nutrition. Students interested in nursing must seek information about these prerequisites on a regular basis because they are subject to change.

Additional information and advisement may be obtained at the UHPO.

Early Admission Programs

3-4 Dental Early Admission Program (DEAP). This is a joint program between The University of Texas at San Antonio and The University of Texas Health Science Center at San Antonio Dental School. This program offers students with an interest in dentistry the opportunity to receive early conditional acceptance to the dental school and to earn both a Bachelor of Science degree in Biology at UTSA and a Doctor of Dental Surgery degree at UTHSCSA within seven years. Students must complete no more than 30 semester credit hours of coursework to apply to the program. A list of the requirements for acceptance into the program and for its completion, as well as application forms and procedures, are available in the UHPO.

Joint Admission Medical Program (JAMP). The Joint Admission Medical Program was created by the Texas Legislature (Texas Education Code, § 51.821 *et seq.*) to provide services to "highly qualified, economically disadvantaged students" who want to be physicians. If selected for JAMP, a student will receive numerous benefits throughout college and into medical school: a scholarship each semester of college (beginning in the spring of the sophomore year); a stipend each summer to attend two medical school enrichment

(internship) programs; mentoring throughout college and into medical school; and admission into a Texas medical school (if all requirements are met). Students must apply by September 1 of their sophomore year by which time they must have completed 27 hours of undergraduate credit during their freshman year and earned no less than a 3.25 grade point average. Contact the UHPO for more information and advisement and visit the JAMP Web site at www.utsystem.edu/JAMP/ for additional details.

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Undergraduate Certificate Programs

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2. Undergraduate Certificate Programs

Undergraduate certificate programs provide training opportunities for those students enrolled at UTSA as undergraduates. Certificate programs are narrower in scope and shorter in duration than baccalaureate degrees. Undergraduate certificate programs are neither "degree" programs nor teacher certification programs. Students wishing to be certified to teach at the elementary, middle school, or high school level should refer to the "Teacher Certification Programs for Undergraduate Students" in Chapter 5 of this catalog.

Currently, the following undergraduate certificate programs are offered:

- Bilingual Business Certificate – Spanish offered by the College of Business.
- Certificate in Athletic Coaching offered by the Department of Health and Kinesiology, College of Education and Human Development.
- Certificate in Jazz Studies offered by the Department of Music, College of Liberal and Fine Arts.
- Certificate in Music Technology offered by the Department of Music, College of Liberal and Fine Arts.

Admission Requirements

Undergraduates who are currently enrolled in baccalaureate degree programs or enrolled as non-degree-seeking students and who wish to earn undergraduate certificates are eligible to seek enrollment in undergraduate certificate programs. An undergraduate wishing to enroll in a certificate program should contact the Certificate Program Advisor and request permission to enter into the program. An approval is needed to enter into a certificate program and must be granted by the Certificate Program Advisor and the Dean of the college in which the certificate program is housed.

Students not currently admitted to UTSA who wish to earn undergraduate certificates will be required to apply for admission to UTSA as non-degree-seeking, special students at the undergraduate level, and indicate in the application process their desires to pursue the requirements for undergraduate certificates. Applicants will be required to meet University admission requirements for special students at the undergraduate level. After the student is admitted to UTSA as a special undergraduate, the student needs to contact the Certificate Program Advisor and request permission to enter into the certificate program. Approval to enter into a certificate program must be granted by the Certificate Program Advisor and the Dean of the college in which the certificate program is housed.

Any student admitted to a certificate program without being currently enrolled in a baccalaureate degree program is considered a non-degree-seeking student. If such a student wishes to enter into a degree program, he or she will be required to reapply to UTSA as a degree-seeking undergraduate. Admittance into or completion of a certificate program is not considered to be qualification for admission as a degree-seeking undergraduate.

Students who are pursuing a certificate as non-degree-seeking students will not be eligible for financial aid or Veterans Administration educational benefits.

Graduate students may enroll in undergraduate certificate programs, provided they meet the requirements for enrollment in a graduate certificate program (see *UTSA Graduate Catalog*).

Certificate Requirements

Each undergraduate certificate program at UTSA must require a minimum of 15 semester credit hours, at least 9 of which must be at the upper-division level. All courses that may be used to satisfy the requirements of an undergraduate certificate program must be college-level courses taken at UTSA.

Some courses required for undergraduate certificate programs may require certain prerequisite courses to adequately prepare students for the needed course. Before enrolling in any course required for a certificate program, students will be required to satisfy all the prerequisites for the course as listed in the course description.

In order to receive an undergraduate certificate from UTSA, a student must meet the following minimum requirements:

1. Complete all the requirements of the individual undergraduate certificate program.
2. Receive a grade of "C–" or better in each course used to satisfy the requirements of the individual undergraduate certificate program.
3. Achieve at least a 2.5 grade point average (on a 4.0 scale) in all courses used to satisfy the requirements of the individual certificate program.

The student's Certificate Program Advisor will verify the completion of requirements. Upon completion of the certificate requirements or graduation from a degree-granting program offering the certificate—see specific program for details—the certificate will be recorded on the student's undergraduate transcript.

It is the responsibility of the student to meet with the Certificate Program Advisor during the last semester of certificate coursework in order to verify that all requirements for completion are met. Students who complete a certificate program without completing a degree program do not receive a University diploma.

Applying for the Certificate

It is the student's responsibility to apply for the certificate by submitting a completed Application for Undergraduate Certificate to the Enrollment Services Center prior to the last day of the semester of graduation. The application form is located at http://utsa.edu/registrar/forms.html. Students with questions about the application should contact Graduation Coordination at graduationcoordination@utsa.edu.

College of Architecture

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3. College of Architecture

The College of Architecture offers undergraduate degree programs in three majors within the design and construction of the built environment. Degree programs include a Bachelor of Science degree in Architecture, a Bachelor of Science degree in Construction Science and Management, and a Bachelor of Science degree in Interior Design.

Admission Criteria for Freshman and Freshman-Transfer Students

Available openings within the College of Architecture are limited and, therefore, entry is competitive. Successful applicants entering the College from high school and freshman-transfer students (who have attempted less than 30 semester credit hours of college-level coursework) will be directly admitted, as a pre-major (pre-ARC for B.S. in Architecture, pre-CSM for B.S. in Construction Science and Management, or pre-IDE for B.S. in Interior Design), into the Foundation Year Program. The 28-semester-credit-hour Foundation Year Program (FYP) is designed to provide a broad exposure to the professions of the built environment and provide a strong foundation for future study in each of the College's three academic majors.

An applicant for a College of Architecture major will be admitted to the respective pre-major by holistic review by the College of Architecture. The holistic review will consider applicants' SAT or ACT scores, high school grade point average, high school rank, and any college-level work. The priority deadline is March 1; applications will be accepted until all spaces are filled or by July 1, whichever occurs first.

Students admitted to the University as pre-Architecture majors, pre-Construction Science and Management majors, and pre-Interior Design majors must follow the current policy and will be considered for admission to the applicable College of Architecture major only after completing the FYP and applying for admission via a Gateway Application to their chosen major (see below).

Admission to a Major

Students must successfully complete the FYP (28 semester credit hours) in order to be eligible to apply for the Gateway review process and subsequent admission into a major in the College of Architecture. Students who have completed the FYP must submit a Gateway Application (an application to a major in the College of Architecture) by the first Monday in May for review and consideration for admission into one of the College of Architecture majors for the following Fall semester. Applications are available on the College Web site. Gateway reviews are conducted at the conclusion of each Spring semester (once annually), for entry in the subsequent Fall semester. Students not accepted into any one of the three majors within the College of Architecture will be exited from the College (see Academic Standing and Exiting the College of Architecture).

Admission Criteria for Transfer Students

Transfer applicants from outside UTSA (who have attempted 30 or more semester credit hours of college-level coursework) who wish to transfer to one of the three academic majors with advanced standing must comply with the FYP and application requirements indicated above and must apply to the Associate Dean for Academic Affairs and Undergraduate Studies by the first Monday in May for review and consideration for advanced standing. External transfer applicants who have completed architecture coursework elsewhere must submit application packages that include their cumulative grade point average, a letter of interest, and a portfolio of studio work for students transferring into Architecture and Interior Design.

Transfer students who have attempted 30 or more semester credit hours of college-level coursework, have met University transfer admission criteria, and have applied for a College of Architecture major must meet the following requirements:

1. An applicant must submit a Gateway Application (i.e., an application to a major in the College of Architecture) by the first Monday in May for review and consideration for admission into one of the College of Architecture majors or pre-majors for the following Fall semester. Transfer students will not be considered for admission into College of Architecture majors or pre-majors for Spring and Summer semesters. Transfer students admitted to the University for Spring or Summer semesters may apply for a change of major to a College of Architecture major or pre-major for a subsequent Fall semester (see below). Gateway applications are available on the College Web site.

2. An applicant for admission into the Architecture or Interior Design majors who has completed architecture coursework elsewhere must include his or her cumulative grade point average, a letter of interest, and a portfolio of studio work in the application package. The portfolio should be sent directly to the College of Architecture.

3. An applicant who has completed the equivalent of the Foundation Year and Gateway requirements elsewhere will be reviewed for admission into a College of Architecture academic major of Architecture, Construction Science and Management, or Interior Design by holistic review by the College and appropriate department or program. Transfer students who have completed the equivalent of the Foundation Year and Gateway requirements will not be considered for admission into a College of Architecture pre-major.

4. An applicant who has not completed the equivalent of the Foundation Year and Gateway requirements elsewhere will be reviewed for admission into a College of Architecture pre-major by holistic review by the College and appropriate department or program. Transfer students who have not completed

the equivalent of the Foundation Year and Gateway requirements will not be considered for admission into a College of Architecture academic major.

Transfer students admitted as pre-Architecture majors, pre-Construction Science and Management majors, or pre-Interior Design majors must follow the policies described above and may be considered for the corresponding College of Architecture academic major after completing the Foundation Year and Gateway requirements.

Change of Major

Change of Major applications are only considered for Fall semester entry. Students currently enrolled in UTSA who wish to transfer to one of the three College of Architecture academic majors must submit a Change of Major application to the Associate Dean for Academic Affairs and Undergraduate Studies by the first Monday in May. Application decisions will be made in June. Admission to the three academic programs is limited. Change of major students without coursework in one of the degree programs must include their GPA and a letter of interest in their application package.

Approved changes of major to a College of Architecture academic major or pre-major will be effective only at the beginning of Fall semesters. Requirements for Change of Major to a College of Architecture Major for UTSA students are as follow: (1) a UTSA student wishing to change their major to a College of Architecture major or pre-major must submit a Change of Major application to the College of Architecture by the first Monday of May to be effective the following Fall semester, and (2) the student must receive approval from the College of Architecture to change a major to one of the College of Architecture majors or pre-majors.

Academic Standing and Exiting the College of Architecture

College of Architecture major (B.S. degrees in Architecture, Construction Science and Management, and Interior Design); and pre-major (pre-ARC, pre-CSM, and pre-IDE) students must maintain good academic standing in the College. This requires that the student: (1) meets all University regulations related to good academic standing, to include a UTSA grade point average of at least 2.0, and (2) complete courses offered in the College of Architecture with a grade "C–" or better.

Students who do not meet University good standing will be placed on academic probation. Students on University academic probation have one subsequent semester (Fall, Spring or Summer) to achieve good academic standing in the University.

Students who do not meet requirements for good academic standing in the University at the end of one subsequent enrolled semester or have not been admitted to a major in Architecture, Construction Science and Management, or Interior Design will be exited from the College of Architecture and classified as undeclared (UND). However, students who have failed any of the Foundation Year courses are permitted to retake them once and reapply for admission to a major in the next year. All College of Architecture majors must be in good academic standing in the College in order to receive a bachelor's degree offered by the College of Architecture. Exited students may not return to the College for an undergraduate degree but they may pursue other majors in the University if they meet UTSA requirements for good academic standing. Under urgent and unusual circumstances, exited students may appeal their exit from the College. All appeals can be made to the Associate Dean for Academic Affairs and Undergraduate Studies. The deadline for appeal is no later than four weeks into the semester immediately following their exit. See the College of Architecture Undergraduate Advising Center for required forms.

Signature Experience Requirement

Every undergraduate degree program in the College of Architecture requires an approved signature experience course for graduation. College-approved signature experiences may include international studies, design-build/community outreach, and/or approved internships/practicums. Students are advised to consult the College Web site or the Associate Dean for Academic Affairs and Undergraduate Studies for current signature experience opportunities, application and approval processes and forms.

Foundation Year Program (28 semester credit hours)

1. Mathematics, science, and writing Core Curriculum courses (13 semester credit hours):

   MAT 1093 Precalculus

   PHY 1603, 1611 Algebra-based Physics I and Laboratory
   or
   PHY 1903, 1911 Engineering Physics I and Laboratory

   WRC 1013 Freshman Composition I
   WRC 1023 Freshman Composition II

2. College of Architecture courses common to all degree programs (15 semester credit hours):

   COA 1113 Introduction to the Built Environment
   COA 1133 Building Technology I
   COA 1213 Design I
   COA 1223 Design II
   COA 1313 Design Visualization

Bachelor of Science Degree in Construction Science and Management

The Construction Science and Management (CSM) Program combines courses in construction science, architecture and business to educate managers for the construction industry. The minimum number of semester credit hours required for the degree, including Core Curriculum requirements, is 125, at least 39 of which need to be at the upper-division level. Students obtaining a Bachelor of Science (B.S.) degree in Construction Science and Management pursue management careers in a wide variety of occupations throughout the construction industry. The degree also provides students with the opportunity to continue with their studies in a graduate program.

The curriculum prepares students to manage the construction process, skilled trades, technologists and craftspeople on the job site and effectively interact with architects, engineers, owners and other professionals who compose the team required by the complexities

of modern building projects. Project owners recognize the need for timely project delivery, indoor/outdoor environmental quality, and short-term and life-cycle costing. Therefore, the curriculum emphasizes environmentally sustainable building practice, project and cost controls, communication skills, understanding the technical aspects of construction and the construction process, and the application of information technology to the construction industry. In addition to the formal academic curriculum, students are required to obtain a construction management internship in the building industry between their junior and senior years. The program maintains a close partnership with the construction industry to provide graduates who are in great demand.

Admission to the Major in Construction Science and Management: Available openings within the Construction Science and Management Program (second to fourth year courses) are limited and, therefore, entry is competitive. Successful applicants entering the College of Architecture from high school and transfer students will be directly admitted, as a pre-major, into the Foundation Year Program. Entry into the CSM major and second year courses is determined by the grade point average (GPA) of the 28 semester credit hours required in the Foundation Year of the College of Architecture. Students must complete all 28 hours of Foundation Year courses to be considered for acceptance into the Construction Science and Management Program. Acceptance to the Construction Science and Management Program is reviewed and granted only after the completion of the Spring Semester each year.

Laptop Initiative: Students must have a laptop (notebook) computer upon entering the program. Software recommendations are designed to provide students with the basis for purchasing a computer that will be powerful enough to run the latest construction management, CAD, 3-D modeling, word-processing, business presentation, and spreadsheet software. The computer should be upgradeable in order to be of productive use for the duration of the academic program. A copy of the recommended minimum laptop specifications is available in the College of Architecture or online at http://utsa.edu/architecture/.

Student Work: The College of Architecture reserves the right to retain, exhibit, and reproduce work submitted by students. Work submitted for grading is the property of the College of Architecture and remains such until it is returned to the student.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Construction Science and Management must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1093 should be used to satisfy the core requirement in Mathematics. ES 2013, PHY 1603 or PHY 1903, and GEO 1103 may be used to satisfy the core requirement in Natural Sciences as well as major requirements. ARC 2413 should be used to satisfy the core requirement in Visual and Performing Arts. ARC 1413 or ARC 1513 should be used to satisfy the core requirement in World Society and Issues.

Degree Requirements

A. Foundation Year sequence (28 semester credit hours):

1. 13 semester credit hours of mathematics, science, and writing Core Curriculum courses:

   MAT 1093 Precalculus

   PHY 1603, 1611 Algebra-based Physics I and Laboratory
   or
   PHY 1903, 1911 Engineering Physics I and Laboratory

   WRC 1013 Freshman Composition I
   WRC 1023 Freshman Composition II

2. 15 semester credit hours of required courses completed with a grade of "C–" or better in each course:

   COA 1113 Introduction to the Built Environment
   COA 1133 Building Technology I
   COA 1213 Design I
   COA 1223 Design II
   COA 1313 Design Visualization

B. Construction Science and Management Program sequence (70 semester credit hours). Must be completed with a grade of "C–" or better in each course:

1. 52 semester credit hours in architecture, construction science and management, and science (ARC 2413 and ES 2013 or GEO 1103 may also be used to satisfy Core Curriculum requirements):

   ARC 2223 Building Technology II
   ARC 2413 History of Architecture: Prehistory through Medieval
   ARC 3233 Building Technology III
   ARC 3343 Building Technology IV
   ARC 3353 Building Technology V
   CSM 2323 Construction Documents
   CSM 3011 Construction Industry Contemporary Issues
   CSM 3111 Construction Surveying
   CSM 3621 Construction Safety I
   CSM 4013 Construction Estimating I
   CSM 4023 Construction Estimating II
   CSM 4513 Construction Management I
   CSM 4523 Construction Management II
   CSM 4613 Sustainable Building Practice
   CSM 4633 Construction Law
   CSM 4713 Construction Capstone
   CSM 4931 Internship (must be repeated for credit in consecutive summer sessions)
   ES 2013 Introduction to Environmental Systems I
   ES 2021 Introduction to Environmental Systems I Laboratory

GEO 1103 Introduction to Earth Systems
GEO 1111 Introduction to Earth Systems Laboratory

2. 18 semester credit hours in business and related courses (ECO 2013 or ECO 2023 may also be used to satisfy Core Curriculum requirements):

ACC 2013 Principles of Accounting I
ACC 2033 Principles of Accounting II
BLW 3013 Business Law
ECO 2013 Introductory Macroeconomics
ECO 2023 Introductory Microeconomics
MGT 3013 Introduction to Organization Theory, Behavior, and Management

C. 12 semester credit hours of electives completed with a grade of "C–" or better in each course:

1. 6 semester credit hours of prescribed electives selected from the following list (ARC 1413 or ARC 1513 may also be used to satisfy Core Curriculum requirements):

ARC 1413 Architecture and Culture
ARC 1513 Great Buildings and Cities of the World
ARC 3433 Topics in Architecture and Thought
CSM 2333 Construction Culture and History
CSM 4533 Building Information Modeling for Construction Management
CSM 4623 Construction Safety II
CSM 4643 Mechanical, Electrical and Plumbing Systems
CSM 4953 Special Studies in Construction Science and Management
SPN 2023 Intermediate Spanish II
SPN 3153 Spanish for the Business/Management Fields

2. 3 semester credit hours of a communication elective selected from the following list:

COM 1053 Business and Professional Speech
COM 2113 Public Speaking

3. 3 semester credit hours of a social and behavioral science elective (may also be used to satisfy Core Curriculum requirements)

B.S. in Construction Science and Management – Recommended Four-Year Academic Plan

Courses	Credit Hours
FOUNDATION YEAR (Pre-Construction Science and Management/PRC)	
Fall	
COA 1113	3
COA 1213	3
COA 1313	3
MAT 1093 (core)	3
WRC 1013 (core)	3
Total semester hours	*15*
Spring	
COA 1133	3
COA 1223	3
PHY 1603/1611 or PHY 1903/1911 (core)	4
WRC 1023 (core)	3
Total semester hours	*13*

GATEWAY TO MAJOR

SECOND YEAR

Fall	
ARC 1413 or 1513 (core)	3
ARC 2413 (major and core)	3
ARC 2223	3
CSM 2323	3
ECO 2023 (major and core)	3
Total semester hours	*15*
Spring	
ACC 2013	3
ARC 3233	3
CSM 4013	3
ECO 2013	3
Communication Elective	3
Total semester hours	*15*

THIRD YEAR

Fall	
ARC 3343	3
CSM 4023	3
CSM 4513	3
POL 1013 (core)	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
ACC 2033	3
ARC 3353	3
CSM 3011	1
CSM 4523	3
POL 1133 or 1213 (core)	3
U.S. History & Diversity core	3
Total semester hours	*16*
Summer	
May Mini-mester	
CSM 3111	1
CSM 3621	1
Five-Week Terms	
CSM 4931	1
CSM 4931	1
Total semester hours	*4*

Courses	Credit Hours
FOURTH YEAR	
Fall	
CSM 4613	3
CSM 4633	3
ES 2013/2021 (major and core)	4
MGT 3013	3
Literature core	3
Total semester hours	*16*
Spring	
BLW 3013	3
CSM 4713	3
GEO 1103/1011	4
Prescribed Elective	3
Social & Behavioral Science core	3
Total semester hours	*16*

Bachelor of Science Degree in Interior Design

The Bachelor of Science (B.S.) in Interior Design is a four-year Council for Interior Design Accreditation (CIDA) accredited professional degree. The minimum number of semester credit hours required for the degree, including Core Curriculum requirements, is 124, at least 42 of which must be at the upper-division level. Students are advised to complete the B.S. in Interior Design degree coursework in the order indicated within the "Recommended Curriculum" issued by the College of Architecture for their catalog year.

External Transfer Students: All transfer students are required to submit a bound portfolio (maximum size 8.5 inches by 11 inches) to the College of Architecture as soon as admittance to the University is approved. Portfolios must be received at the College of Architecture prior to the first Monday in May for Fall Semester admission. The portfolio must clearly demonstrate creative and communicative skills in written and graphic form. A complete transcript of all professional courses accompanied by the catalog descriptions from the originating institutions must be included. Do not send slides or original work. A postage-paid, self-addressed return envelope must be included for return of the work to the candidate. The portfolio will be reviewed to determine the student's placement within the curricular sequence.

Admission to the Major in Interior Design: Available openings within the Interior Design Program (second to fourth year courses) are limited and, therefore, entry is competitive. Entry is determined by the grade point average (GPA) of the 28 semester credit hours required in the Foundation Year of the College of Architecture. Students must complete all 28 hours of Foundation Year courses to be considered for acceptance into the Interior Design Program. Acceptance to the Interior Design Program is reviewed and granted only after the completion of the Spring Semester each year.

Laptop Initiative: The Laptop Initiative program requires that students entering the Interior Design Program (second year) have their own laptop (notebook) computer and required software. Digital technology will be integrated into the studio work and will be necessary in order to fulfill project requirements. The computer should be upgradeable in order to be of productive use for the duration of the academic program. A copy of the recommended minimum laptop specifications is available in the College of Architecture or online at http://utsa.edu/architecture/.

Student Work: The College of Architecture reserves the right to retain, exhibit, and reproduce work submitted by students. Work submitted for grading is the property of the College of Architecture and remains such until it is returned to the student.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Interior Design must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1093 should be used to satisfy the core requirement in Mathematics. PHY 1903 should be used to satisfy one of the core requirement in Natural Sciences. ARC 2413 should be used to satisfy the core requirement in Visual and Performing Arts. ARC 1413 or ARC 1513 should be used to satisfy the core requirement in World Society and Issues.

Degree Requirements

A. Foundation Year sequence (28 semester credit hours):

1. 13 semester credit hours of mathematics, science, and writing Core Curriculum courses:

   MAT 1093 Precalculus

   PHY 1603, 1611 Algebra-based Physics I and Laboratory
   or
   PHY 1903, 1911 Engineering Physics I and Laboratory

   WRC 1013 Freshman Composition I
   WRC 1023 Freshman Composition II

2. 15 semester credit hours of required courses completed with a grade of "C–" or better in each course:

   COA 1113 Introduction to the Built Environment
   COA 1133 Building Technology I
   COA 1213 Design I
   COA 1223 Design II
   COA 1313 Design Visualization

B. Interior Design Program sequence (69 semester credit hours). Must be completed with a grade of "C–" or better in each course:

1. 66 semester credit hours of required architecture and interior design courses:

ARC	2413	History of Architecture: Prehistory through Medieval
ARC	3343	Building Technology IV
ARC	3353	Building Technology V
IDE	2116	Design III
IDE	2126	Design IV
IDE	2143	Interior Materials and Assemblies I
IDE	2423	History of Design: Renaissance through Nineteenth Century
IDE	3153	Interior Materials and Assemblies II
IDE	3236	Interior Design Studio I
IDE	3246	Interior Design Studio II
IDE	3613	History of Modern Design
IDE	4266	Systems Integration Studio
IDE	4276	Capstone Studio
IDE	4413	Capstone Preparation
IDE	4423	Topics in Design Theory
IDE	4513	Practice and Ethics

2. 3 semester credit hours of electives

B.S. in Interior Design – Recommended Four-Year Academic Plan

Courses	Credit Hours
FOUNDATION YEAR (Pre-Interior Design/PRI)	
Fall	
COA 1113	3
COA 1213	3
COA 1313	3
MAT 1093 (core)	3
WRC 1013 (core)	3
Total semester hours	*15*
Spring	
COA 1133	3
COA 1223	3
PHY 1603/1611 or PHY 1903/1911 (core)	4
WRC 1023 (core)	3
Total semester hours	*13*
GATEWAY TO MAJOR	
SECOND YEAR	
Fall	
ARC 1413 or 1513 (core)	3
ARC 2413 (major and core)	3
IDE 2116	6
IDE 2143	3
Total semester hours	*15*
Spring	
IDE 2126	6
IDE 2423	3
IDE 3153	3
Economics core	3
Social & Behavioral Science core	3
Total semester hours	*18*
THIRD YEAR	
Fall	
ARC 3343	3
IDE 3236	6
IDE 3613	3
POL 1013 (core)	3
U.S. History & Diversity core	3
Total semester hours	*18*
Spring	
ARC 3353	3
IDE 3246	6
IDE 4423	3
U.S. History & Diversity core	3
Total semester hours	*15*
FOURTH YEAR	
Fall	
IDE 4266	6
IDE 4413	3
IDE 4513	3
Elective	3
Total semester hours	*15*
Spring	
IDE 4276	6
POL 1133 or 1213 (core)	3
Literature core	3
Natural Sciences core	3
Total semester hours	*15*

DEPARTMENT OF ARCHITECTURE

Bachelor of Science Degree in Architecture

The Bachelor of Science (B.S.) in Architecture is a four-year pre-professional degree. The minimum number of semester credit hours required for the degree, including Core Curriculum requirements, is 121, at least 39 of which must be at the upper-division level. Students are advised to complete the B.S. in Architecture coursework in the order indicated in the "Recommended Curriculum" issued by the College of Architecture for their catalog year.

The B.S. in Architecture is a program that provides students with the opportunity to prepare for the continuation of studies in a professional graduate program to earn a Master of Architecture (M. Arch.) degree. Completion of the B.S. in Architecture degree allows the graduate to pursue limited architectural practice but does not, in itself, fully prepare the graduate for architectural licensure. Students in the B.S. in Architecture program are advised that the certification for architectural registration and professional practice by the National Council of Architectural Registration Boards (NCARB) requires, in virtually all cases, an accredited professional degree and broad architectural education such as that provided by the Master of Architecture (M. Arch.) program at UTSA.

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

Master's accredited degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree, which when earned sequentially, comprise an accredited professional education. However, the pre-professional undergraduate degree is not, by itself, recognized as an accredited degree.

External Transfer Students: All transfer students are required to submit a bound portfolio (maximum size 8.5 inches by 11 inches) to the College of Architecture as soon as admittance to the University is approved. Portfolios must be received at the College of Architecture prior to the first Monday in May for Fall Semester admission. The portfolio must clearly demonstrate creative and communicative skills in written and graphic form. A complete transcript of all professional courses accompanied by the catalog descriptions from the originating institutions must be included. Do not send slides or original work. A postage-paid, self-addressed return envelope must be included for return of the work to the candidate. The portfolio will be reviewed to determine the student's placement within the curricular sequence.

Admission to the Major in Architecture: Available openings within the Architecture Program in the second to fourth year courses are limited and, therefore, admission is competitive and is based on the grade point average (GPA) of the 28 semester credit hours required in the Foundation Year of the College of Architecture. Students must complete all 28 hours of Foundation Year courses to be considered for acceptance into the Architecture Program. Acceptance to the Architecture Program is reviewed and granted only after the completion of the Spring Semester each year.

Laptop Initiative: The Laptop Initiative program requires that students entering the Architecture Program (second year) have their own laptop (notebook) computer and required software. Digital technology will be integrated into the studio work and will be necessary in order to fulfill project requirements. The computer should be upgradeable in order to be of productive use for the duration of the academic program. A copy of the recommended minimum laptop specifications is available in the College of Architecture or online at http://utsa.edu/architecture/.

Student Work: The College of Architecture reserves the right to retain, exhibit, and reproduce work submitted by students. Work submitted for grading is the property of the College of Architecture and remains such until it is returned to the student.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Architecture must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1093 should be used to satisfy the core requirement in Mathematics. PHY 1603 or PHY 1903 should be used to satisfy the core requirement in Natural Sciences. One of the following courses may be used to satisfy the remaining core requirement in Natural Sciences: ANT 2033, ANT 2043, AST 1013, CHE 1073, CHE 1103, ES 2013, GEO 1013, GEO 1103, GRG 2613, or PHY 1623. ARC 2413 or ARC 2423 should be used to satisfy the core requirement in Visual and Performing Arts. ARC 1413 or ARC 1513 should be used to satisfy the core requirement in World Society and Issues.

Degree Requirements

A. Foundation Year sequence (28 semester credit hours):

1. 13 semester credit hours of mathematics, science, and writing Core Curriculum courses:

   MAT 1093 Precalculus

   PHY 1603, 1611 Algebra-based Physics I and Laboratory
   or
   PHY 1903, 1911 Engineering Physics I and Laboratory

   WRC 1013 Freshman Composition I
   WRC 1023 Freshman Composition II

2. 15 semester credit hours of required courses completed with a grade of "C–" or better in each course:

   COA 1113 Introduction to the Built Environment
   COA 1133 Building Technology I
   COA 1213 Design I
   COA 1223 Design II
   COA 1313 Design Visualization

B. Architecture Program sequence (66 semester credit hours):

1. 54 semester credit hours of required architectural courses. Must be completed with a grade of "C–" or better in each course:

   ARC 2116 Design III
   ARC 2126 Design IV
   ARC 2223 Building Technology II
   ARC 2413 History of Architecture: Prehistory through Medieval
   ARC 2423 History of Architecture: Renaissance through Nineteenth Century
   ARC 3216 Architecture Studio I
   ARC 3226 Architecture Studio II
   ARC 3233 Building Technology III
   ARC 3343 Building Technology IV
   ARC 3353 Building Technology V
   ARC 3433 Topics in Architecture and Thought
   ARC 3613 History of Modern Architecture
   ARC 4246 Architecture Systems Studio

2. 12 semester credit hours of electives

   It is recommended that the electives should include 6 semester credit hours of foreign language courses.

B.S. in Architecture – Recommended Four-Year Academic Plan

Courses	Credit Hours
FOUNDATION YEAR (Pre-Architecture/PRA)	
Fall	
COA 1113	3
COA 1213	3
COA 1313	3
MAT 1093 (core)	3
WRC 1013 (core)	3
Total semester hours	*15*
Spring	
COA 1133	3
COA 1223	3
PHY 1603/1611 or PHY 1903/1911 (core)	4
WRC 1023 (core)	3
Total semester hours	*13*

Courses	Credit Hours
GATEWAY TO MAJOR	
SECOND YEAR	
Fall	
ARC 1413 or 1513 (core)	3
ARC 2116	6
ARC 2223	3
ARC 2413 (major and core)	3
Total semester hours	*15*
Spring	
ARC 2126	6
ARC 2423	3
ARC 3233	3
Economics core	3
Total semester hours	*15*
THIRD YEAR	
Fall	
ARC 3216	6
ARC 3343	3
ARC 3613	3
POL 1013 (core)	3
U.S. History & Diversity core	3
Total semester hours	*18*
Spring	
ARC 3226	6
ARC 3353	3
ARC 3433	3
POL 1133 or 1213 (core)	3
U.S. History & Diversity core	3
Total semester hours	*18*
FOURTH YEAR	
Fall	
ARC 4246	6
Elective	3
Elective	3
Literature core	3
Total semester hours	*15*
Spring	
Elective	3
Elective	3
Natural Sciences core	3
Social & Behavioral Science core	3
Total semester hours	*12*

College of Business

4

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Minor in Marketing • *66*

4. College of Business

Mission Statement

The College of Business is dedicated to creating and sharing knowledge that enhances the translation of theory to practice. The College combines rigor with relevance and provides innovative solutions to global business challenges.

General Information

The College of Business welcomes all students dedicated to academic success in the study of business. The College is accredited by AACSB (Association to Advance Collegiate Schools of Business) International and is one of only 75 programs internationally with separate accreditation at the undergraduate, master's and doctoral levels in accounting. With 16 majors and 19 minors in the undergraduate program, the College of Business seeks to give students a competitive edge in obtaining and securing employment. The College offers comprehensive advising, career preparation and services provided through the Center for Professional Development and Advising offices.

The College of Business offers a wide variety of programs on campus and abroad to develop students' international business skills. On-campus programs include the Global Business Club for networking and career development. International faculty come to campus each semester and provide lessons for success in diverse cultures. Students who want to demonstrate their professional language skills can earn a Bilingual Business Certificate in Spanish. For travel study, the College offers traditional and innovative programs to fit different student needs. Traditional study abroad programs are offered for students who want to spend a semester studying in a foreign country. The College of Business faculty also take groups of students for international immersion study at locations where they meet executives, take classes and experience an international culture for themselves. Students who participate in College of Business international programs will develop skills to help them succeed in business anywhere in the world.

The Leadership Challenge program, in partnership with the Honors College, provides high-achieving students, primarily in business-related disciplines, with an opportunity to explore and enhance their leadership skills and capacities. Admission to this program is highly competitive, based on academic achievement, extracurricular activities, faculty nominations and personal interviews. The program is housed in the College of Business's Center for Professional Excellence. Class selection occurs each Spring Semester for the program, which spans the following Fall and Spring semesters. The program involves participation in experiential activities, dialogues, reflective writing and a community service project. Honors College students are required to register for 1 semester credit hour (HON 4941) in the Fall Semester, and for 3 semester credit hours (MGT 4953) in the Spring Semester. Non-Honors students have the option of registering for 1 semester credit hour in the Fall (MGT 4951), but are required to register for 3 semester credit hours (MGT 4953) in the Spring.

Students in the College of Business may not enroll in specified 3000- and 4000-level courses in the College of Business before declaring a major. Students majoring in fields outside the College of Business may not take more than 27 semester credit hours in this college without approval of the Dean of the College of Business.

College of Business Declaration of Major Policy for the Bachelor of Arts in Economics and the Bachelor of Science in Statistics

Students seeking a B.A. in Economics or a B.S. in Statistics must have a 2.0 UTSA GPA and transfer students must have a 2.0 transfer GPA to declare the major. Declaration of major forms may be submitted to the College of Business Undergraduate Advising Center. Students seeking these degrees are subject to the academic standing policy of the College of Business.

College of Business Undergraduate Admission Policy for the Bachelor of Business Administration Degree

Admissions Philosophy

The College of Business (COB) at UTSA seeks to use available resources in ways that best prepare as many qualified students as possible for careers in business. Because there are many more students interested in the study of business than the College has resources for, the undergraduate admission policy gives all interested students a specified time to show they can succeed in the College of Business. Students who meet admission requirements may declare their B.B.A. major. Students who do not meet the requirements for declaration of a B.B.A. major are exited from the College but may complete requirements for any other major at UTSA for which they are eligible. A business minor is available to all UTSA students who seek a strong foundation in business.

Direct Admission Criteria

1. Applicants entering UTSA from high school and transfer students who have completed fewer than 30 hours of transferable college credit will be directly admitted to any College of Business major if they:

    - meet all UTSA undergraduate admission requirements
    - are ranked in the top 25 percent of their high school graduation class
    - have successfully completed evaluation under the Texas Success Initiative (TSI), and
    - qualify for enrollment in MAT 1033 (Algebra with Calculus for Business or a higher level mathematics course) and WRC 1013 (Freshman Composition I or higher).

2. Applicants who have completed 30 or more hours of transferable college credit will be directly admitted to any College of Business major if they:

   - meet all UTSA undergraduate admission requirements
   - have a cumulative grade point average of 2.5 or better for all college-level courses completed
   - have successfully completed the following or equivalent courses:

     COM 1053 Business and Professional Speech
     IS 1403 Business Information Systems Fluency
     MAT 1033 Algebra with Calculus for Business (MAT 1214 Calculus I for majors in Actuarial Science).

Indirect Admission Criteria for Applicants Who Do Not Meet Direct Admission Criteria

Applicants who do not meet the criteria for direct admission stated above shall be candidates for the College of Business and designated as prebusiness (PRB) students. Note that in order to qualify as PRB, UTSA students must have a UTSA GPA of a 2.0 and transfer students must have a transfer GPA of 2.0 plus have successfully completed evaluation under the Texas Success Initiative (TSI), and qualify for enrollment in MAT 1033 (Algebra with Calculus for Business or a higher level mathematics course) and WRC 1013 (Freshman Composition I or higher). Students who do not meet the above criteria will be classified as undeclared (UND) until they are college-ready in math and English.

To declare a B.B.A. major, prebusiness students must complete six required courses (18 semester credit hours) and meet two grade point average (GPA) requirements within a specified time. The two GPA requirements include a 2.0 in all coursework taken at UTSA and a 2.2 in all College of Business coursework taken at UTSA within a specified time.

In order to declare a B.B.A. major, students must:

1. Complete the following or equivalent nonbusiness courses (6 semester credit hours):

   COM 1053 Business and Professional Speech
   MAT 1033 Algebra with Calculus for Business (MAT 1214 Calculus I for majors in Actuarial Science)

2. Complete the following or equivalent business courses (12 semester credit hours), including one of the two economics courses:

   ACC 2013 Principles of Accounting I

   ECO 2013 Introductory Macroeconomics
   or
   ECO 2023 Introductory Microeconomics

   IS 1403 Business Information Systems Fluency
   MS 1023 Business Statistics with Computer Applications I (STA 1053 Basic Statistics for majors in Actuarial Science)

3. Meet the following grade point average standards:

   - a grade point average of at least 2.0 for all UTSA coursework
   - a grade point average of at least 2.2 for all UTSA College of Business courses.

Students will be evaluated for declaration of a major when they complete the required four business courses. Therefore, students must complete the two nonbusiness courses by that time. Students who successfully meet the course and GPA requirements by the time they have completed the four business courses (12 hours) will be eligible to declare a major. If any of the required business courses have been completed prior to entering UTSA, students must take additional business courses at UTSA in order to meet the 12-semester-credit-hour requirement.

Students who do not meet the requirements to declare a B.B.A. major after completing 12 semester credit hours of business courses at UTSA will be exited from the College. Once exited, a student's major will be changed to undeclared and students must choose a major other than a business discipline. Exited students may elect to complete a business minor approved for nonbusiness students and will only be permitted to take additional business courses that are required for these minors.

A specific B.B.A. major cannot be guaranteed and will depend on departmental resources. Changes of major must be made through the College of Business Undergraduate Advising Center and approved by the department chair.

Criteria for a B.A. in Economics and B.S. in Statistics

Prebusiness students pursuing a B.A. in Economics or a B.S. in Statistics can declare their major with a 2.0 UTSA GPA and transfer students can declare their major with a 2.0 GPA.

Academic Standing of All Business Majors and Prebusiness Students

College of Business majors (B.B.A. degrees, B.A. degree in Economics and B.S. degree in Statistics) and prebusiness (PRB) students must maintain good academic standing in the College of Business. This requires that the student:

- meets all University regulations related to good academic standing, to include a UTSA grade point average of at least 2.0
- maintains a minimum grade point average of 2.0 in UTSA College of Business courses.

Students who do not meet these requirements are placed on College academic probation. College of Business grade point averages (GPAs) are computed according to University policy (see *UTSA Information Bulletin*). Students on College academic probation have one subsequent semester (Fall, Spring or Summer) to achieve good academic standing in the College.

Students who do not meet requirements for good academic standing in the College at the end of one subsequent enrolled semester will be exited from the College of Business and classified as undeclared (UND). Exited students may not return to the College for an undergraduate degree but they may pursue other majors in the University if they meet UTSA requirements for good academic standing. They

may also pursue College of Business minors for which they are eligible. Under urgent and unusual circumstances, exited students may appeal their exit. The deadline for appeal is no later than four weeks into the semester immediately following their exit. See the College of Business Undergraduate Advising Center for required forms.

All College of Business majors must be in good academic standing in the College in order to receive a bachelor's degree offered by the College of Business. This policy does not pertain to students pursuing a minor in the College of Business.

Business Honors

Bachelor of Business Administration (B.B.A.) majors who have been admitted to the Honors College may earn Business Honors if they maintain a minimum UTSA grade point average of 3.25 and complete an Honors section of five of the following Common Body of Knowledge courses: ACC 2013, ACC 2033, ECO 2013, ECO 2023, FIN 3014, IS 3003, MGT 3013, MGT 4893, MKT 3013, MS 1023, and MS 3043. Certain 5003 courses in the M.B.A. degree program may, subject to approval, substitute for Common Body of Knowledge courses. These undergraduate courses are offered once per year, and enrollment is targeted for B.B.A. degree program majors seeking University Honors. Contingent upon available space, students with outstanding academic records, including exceptional freshmen and transfer students, can apply for admission into these classes subject to approval by the faculty member, department chair, and Dean of the College of Business. Honors classes emphasize class discussion, presentations, and business research.

Scholarships

The College of Business has many scholarships available to assist students in reaching their educational and career goals. The scholarship program within the College is managed generally by the College of Business Office of the Dean. Students should visit the College of Business Web site for information and application procedures for all scholarships within the College. Detailed information and eligibility requirements for specific scholarships administered through the College are available at http://business.utsa.edu/undergraduate/. Other scholarship information is available through the UTSA Scholarship Office. The number and amounts of scholarship awards vary. Additionally, scholarship eligibility requirements differ, but may include considerations of grade point average, financial need, number of semester credit hours completed, enrollment status, activities, residency status, or bilingualism. Students must complete the application process and submit required documentation by the deadlines stated on application materials. Students will be considered for all awards for which they meet the eligibility criteria. Award amounts are generally disbursed equally among the semesters covered by the scholarship as long as recipients continue to meet grade point average, enrollment, and other scholarship criteria.

Minors in the College of Business

The following College of Business minors are open to any UTSA major: Minor in Actuarial Science; Minor in Adaptive Decision Models for Business; Minor in Applied Statistics; Minor in Economics; Minor in Electronic Commerce; Minor in Infrastructure Assurance and Security; Minor in Information Systems; Minor in Digital Forensics; Minor in Network and Data Center Management; and Minor in Management Science.

The following College of Business minors are open to B.B.A. majors only: Minor in Finance; Minor in International Management; Minor in Management; Minor in Marketing; and Minor in Real Estate.

The following College of Business minors are open to nonbusiness majors, B.A. in Economics majors, and B.S. in Statistics majors only: Minor in Business Administration and Minor in Technology Management.

The following College of Business minors are open only to students pursuing the B.B.A. in Real Estate Finance and Development: Minor in Construction Management; and Minor in Facility and Property Management.

Bilingual Business Certificate – Spanish

The Bilingual Business Certificate – Spanish is designed to prepare business students with the language and cultural skills necessary for successful international business careers between Spanish-speaking and English-speaking countries. It certifies to employers that students awarded the certificate have completed coursework and field experiences that prepare them for business careers in Spanish-speaking and English-speaking countries. The certificate is granted upon graduation from the University to students with a major or minor in business.

Eligibility requirements:

- Ability to read, write, and speak in Spanish
- Minimum of a 2.5 grade point average

To earn a Bilingual Business Certificate – Spanish, students must earn 15 semester credit hours (9 of these must be upper division) as follows:

A. 9 hours of business courses taught in Spanish – refer to list 1 for options

B. 3 hours of comparative business courses – refer to list 2 for options

C. 3 hours in a Spanish-speaking international program – refer to list 3 for options

To apply for the Bilingual Business Certificate – Spanish, students should consult with the College of Business International (COBI) program for specific information about program requirements and consult with their academic advisor to verify that they have met all requirements.

Business courses taught in Spanish may be taken at UTSA or transferred from an international institution. Candidates should consult with their academic advisor about transferring credits. Transfer credits are limited to 9 hours. Students must meet 6 hours of residency requirements for the Certificate.

List 1. Business courses taught in Spanish through the College of Business will be offered on a rotating basis. They may include but are not limited to:

ACC	2033	Principles of Accounting II
BLW	3013	Business Law
MKT	3013	Principles of Marketing
MS	3043	Business Statistics with Computer Applications II
MGT	3013	Introduction to Organization Theory, Behavior, and Management

List 2. Comparative business courses include:

ECO 3193 International Economics
ECO 4303 Economics of Developing Countries
FIN 4613 Introduction to International Finance
MGT 4073 International Management
MGT 4083 Comparative International Management Practices
MKT 4073 International Marketing
Pre-approved UTSA courses with an international study component

List 3. Currently available international programs include:

- one semester of study at an international university in a Spanish-speaking country
- an internship in a Spanish-speaking environment
- UTSA faculty-led study abroad "immersion" programs in a Spanish-speaking country

Enrollment in College of Business Courses

Enrollment in College of Business courses, with the exception of ACC 2003, ECO 2003, and FIN 2003 (which are courses that may not be counted toward a business major), is restricted to students who have successfully completed evaluation under the Texas Success Initiative (TSI) and qualify for enrollment in MAT 1033 (Algebra with Calculus for Business or a higher level mathematics course) and WRC 1013 (Freshman Composition I or higher). Additionally ACC 2033 and MS 1023 will be open to prebusiness and declared business majors and restricted to undeclared (BA-UND) majors. Other majors must have departmental approval and may seek approval through the undergraduate advising center.

College of Business courses at the 3000- and 4000-level are restricted to College of Business majors or to students who require the courses for their particular degree, with the following exceptions: BLW 3013, FIN 3003, MGT 3013, and MKT 3013. These courses are open to all students who meet course prerequisites. Enrollment in upper-division statistics courses is open to all students who meet prerequisites. Enrollment in all other 3000- and 4000-level College of Business courses may be open to nonbusiness majors with at least an overall UTSA grade point average of 2.75, contingent upon approval of the faculty member teaching the course and the department chair. See the College of Business Undergraduate Advising Center for the required form. In addition, students majoring in fields outside the College of Business may not take more than 27 semester credit hours in the College without approval of the Dean of the College of Business.

College of Business Academic Credit Internship Policy

The policy for undergraduate students to enroll in internships for academic credit includes the following provisions:

1. The student must be a declared major in the College of Business and in good academic standing at UTSA and in the College of Business.
2. The student must:
   - Have completed a minimum of 75 semester credit hours, of which a minimum of 15 credit hours have been completed at UTSA.
   - Meet all internship course prerequisites, including the minimum grade point average required for enrolling in the internship.
3. The internship must be in (or related to) the student's declared major. The student should consult his/her major degree requirements for specific details.
4. Each student must meet the requirements of his/her catalog of graduation regarding the total number of semester credit hours that may be earned through internships for academic credit, and meet the following provisions:
   - Each 3-credit-hour academic internship must be completed with a different company/organization.
   - An academic credit internship with a firm at which a student is currently employed may be considered, but only if clear evidence shows that the internship is substantially and programmatically different from such employment.

The Texas Higher Education Coordinating Board Field of Study Curriculum for Business

The Texas Higher Education Coordinating Board has mandated a field of study curriculum for Business which consists of seven (7) courses with the following Texas Common Course Numbers (TCCN). UTSA courses satisfying this requirement are listed in parentheses (see Appendix B in this catalog for a list of TCCN courses).

2 courses in Accounting:
TCCN: ACCT 2301 (ACC 2013 Principles of Accounting I)
TCCN: ACCT 2302 (ACC 2033 Principles of Accounting II)

1 course in Computer Literacy:
TCCN: BCIS 1305 (IS 1403 Business Information Systems Fluency)

2 courses in Economics:
TCCN: ECON 2301 (ECO 2013 Introductory Macroeconomics)
TCCN: ECON 2302 (ECO 2023 Introductory Microeconomics)

1 course in Mathematics:
TCCN: MATH 1325 (MAT 1033 Algebra with Calculus for Business)

1 course in Speech:
TCCN: SPCH 1321 (COM 1053 Business and Professional Speech)

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

Course or Requirement			Semester Credit Hours
ACC	2013	Principles of Accounting I	3
ACC	2033	Principles of Accounting II	3
BLW	3013	Business Law	3
COM	1053	Business and Professional Speech	3
ECO	2013	Introductory Macroeconomics (satisfies Economics Core Curriculum requirement)	3

Course or Requirement			Semester Credit Hours
ECO	2023	Introductory Microeconomics	3
FIN	3014	Principles of Business Finance	4
GBA	2013	Social and Ethical Issues in Business	3
IS	1403	Business Information Systems Fluency	3
IS	3003	Principles of Information Systems for Management	3
MAT	1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement) (Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)	3
MGT	3003	Business Communication and Professional Development	3
MGT	3013	Introduction to Organization Theory, Behavior, and Management	3
MGT	4893	Management Strategy (taken in semester of graduation)	3
MKT	3013	Principles of Marketing	3
MS	1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)	3
MS	3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)	3
MS	3053	Management Science and Operations Technology	3

Students completing degree course requirements with fewer than 120 semester credit hours will augment their program with electives.

Bachelor of Business Administration Degree in General Business

The Bachelor of Business Administration degree in General Business is an interdisciplinary program within the College of Business. The minimum number of semester credit hours for this degree is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in General Business must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Economics.

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC	2013	Principles of Accounting I
ACC	2033	Principles of Accounting II
BLW	3013	Business Law
COM	1053	Business and Professional Speech
ECO	2013	Introductory Macroeconomics (satisfies Economics Core Curriculum requirement)
ECO	2023	Introductory Microeconomics
FIN	3014	Principles of Business Finance
GBA	2013	Social and Ethical Issues in Business
IS	1403	Business Information Systems Fluency
IS	3003	Principles of Information Systems for Management
MAT	1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement) (Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)
MGT	3003	Business Communication and Professional Development
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MGT	4893	Management Strategy (taken in semester of graduation)
MKT	3013	Principles of Marketing
MS	1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)
MS	3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)
MS	3053	Management Science and Operations Technology

In addition to the Core Curriculum requirements and requirements of the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Degree Requirements

A. 24 semester credit hours of required courses in the major:

BLW	3023	Business Organizations and Commercial Law
ECO	3033	Economics of Managerial Decisions
FIN	3313	Money and Banking
MGT	3023	Understanding People and Organizations
MKT	4093	Consumer Behavior

9 additional semester credit hours of upper-division courses in the College of Business, of which no more than 6 semester credit hours can be in any one discipline in the College, and at least 3 semester credit hours must be at the 4000 level. FIN 3003 may not be used as an upper-division elective.

B. ENG 2413 Technical Writing

C. 2 semester credit hours of lower-division or upper-division business or non-business electives

Course Sequence Guide for B.B.A. Degree in General Business

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with an academic advisor in the College of Business Undergraduate Advising Center for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
MAT 1033 (core and major)	3
WRC 1013 (core)	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Second Semester	
COM 1053	3
IS 1403	3
WRC 1023 (core)	3
Natural Sciences core - Level I	3
U.S. History & Diversity core	3
Total semester hours	*15*
Third Semester	
ACC 2013	3
ECO 2013* (core and major)	3
MS 1023	3
POL 1013 (core)	3
Literature core	3
Total semester hours	*15*
Fourth Semester	
ACC 2033	3
ECO 2023*	3
MS 3043	3
POL 1133 or POL 1213 (core)	3
Natural Sciences core - Level II	3
Total semester hours	*15*
Fifth Semester	
GBA 2013	3
IS 3003	3
MGT 3003	3
MGT 3013	3
MS 3053	3
Total semester hours	*15*
Sixth Semester	
BLW 3013	3
ENG 2413	3
FIN 3014	4
MGT 3023	3
MKT 3013	3
Total semester hours	*16*
Seventh Semester	
BLW 3023	3
ECO 3033	3
FIN 3313	3
Business elective (upper division)	3
World Society & Issues core	3
Total semester hours	*15*
Eighth Semester	
MGT 4893	3
MKT 4093	3
Business elective (upper division)	3
Business elective (upper division)	3
Business or non-business elective	2
Total semester hours	*14*

* ECO 2013 and ECO 2023 may be taken in either sequence.

Minor in Business Administration

The Minor in Business Administration is open to all University majors (including B.A. in Economics and B.S. in Statistics), except business students seeking a B.B.A. degree. Students pursuing this minor should elect to take ECO 2013 Introductory Macroeconomics (Social and Behavioral Sciences Component) as part of their Core Curriculum requirements. In addition, the following 24 semester credit hours are required in the College of Business:

ACC	2003	Foundations of Accounting
		or
ACC	2013	Principles of Accounting I
BLW	3013	Business Law
ECO	2023	Introductory Microeconomics
FIN	3003	Survey of Finance
GBA	2013	Social and Ethical Issues in Business (prerequisite for BLW 3013)
IS	1403	Business Information Systems Fluency
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MKT	3013	Principles of Marketing

To declare a Minor in Business Administration, obtain advice, and seek approval of substitutions for course requirements, students must consult the College of Business Undergraduate Advising Center.

DEPARTMENT OF ACCOUNTING

Mission Statement

The mission of the Department of Accounting is to advance accounting knowledge and practice through excellence in accounting education, high-impact research, and relevant continuing education and professional outreach activities that serve the constituents of the Department in the state, the nation, and the global community.

Department Honors

The Department of Accounting offers the opportunity for certain of its outstanding students to achieve the designation of Honors in Major and provides the opportunity for advanced study under close faculty supervision.

Selection for honors designation is based on the student's academic performance and recommendation by the Department Undergraduate Program Committee (UPC) in consultation with the faculty of the student's major discipline. To be eligible for the designation, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major. To enroll in honors thesis courses and to graduate with the honors designation, these minimum grade point averages must be maintained. Students applying for Honors in Major are expected to enroll in the appropriate honors thesis course during the final two semesters. The completed thesis must be approved by the supervising faculty sponsor from the student's discipline and the UPC. Students interested in this program should contact the UPC through the Department of Accounting office for additional information. Department honors can be attained independent of, or in addition to, University Honors.

Bachelor of Business Administration Degree in Accounting

The minimum number of semester credit hours for the Bachelor of Business Administration degree in Accounting is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below. Accounting Majors must have a grade of "C–" or better in all major courses listed under section A of the Degree Requirements for the B.B.A. in Accounting.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Accounting must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Economics.

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC	2013	Principles of Accounting I
ACC	2033	Principles of Accounting II
BLW	3013	Business Law
COM	1053	Business and Professional Speech
ECO	2013	Introductory Macroeconomics (satisfies Economics Core Curriculum requirement)
ECO	2023	Introductory Microeconomics
FIN	3014	Principles of Business Finance
GBA	2013	Social and Ethical Issues in Business
IS	1403	Business Information Systems Fluency
IS	3003	Principles of Information Systems for Management
MAT	1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement) (Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)
MGT	3003	Business Communication and Professional Development
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MGT	4893	Management Strategy (taken in semester of graduation)
MKT	3013	Principles of Marketing
MS	1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)
MS	3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)
MS	3053	Management Science and Operations Technology

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Degree Requirements

A. 24 semester credit hours of accounting courses in the major:

ACC	3023	Intermediate Accounting I
ACC	3033	Intermediate Accounting II
ACC	3043	Federal Income Taxation
ACC	3113	Accounting Information Systems
ACC	3123	Cost Analysis
ACC	4013	Principles of Auditing
ACC	4163	Contemporary Issues in Accounting Practice
ACC	4933	Internship in Accounting
		or
ACC	4963	Accounting Practicum

B. 5 semester credit hours of lower-division or upper-division non-accounting business or non-business electives

Notes for students who intend to take the Certified Public Accountant (CPA) examination:

1. Because of the topical coverage of the CPA examination, BLW 3023 Business Organizations and Commercial Law is recommended as a non-accounting elective for students who anticipate taking the CPA examination.
2. The educational requirements for candidates applying for the CPA examination in Texas are regulated by the Texas State Board of Public Accountancy. Students with questions about requirements or eligibility should contact the Texas State Board of Public Accountancy, 333 Guadalupe, Tower III, Suite 900, Austin, TX 78701 or (512) 305-7851 or visit their Web site at www.tsbpa.state.tx.us.
3. The number of accounting hours required to earn a B.B.A. in Accounting is inadequate to sit for the CPA examination under current Texas state law. Please refer to the Five-Year Professional Accounting Program information following the description of ACC 4993.
4. Rule 511.28c of the Texas State Board of Public Accountancy states, "…the board requires that 3 passing semester hours be earned as a result of taking a course in ethics. The course must be taken at a recognized educational institution and should include ethical reasoning, integrity, objectivity, independence and other core values." Students planning to sit for the CPA examination should enroll in the sections of GBA 2013 notated "Recommended for Accounting and Finance majors."

Course Sequence Guide for B.B.A. Degree in Accounting

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with an academic advisor in the College of Business Undergraduate Advising Center for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
MAT 1033 (core and major)	3
WRC 1013 (core)	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Second Semester	
COM 1053	3
IS 1403	3
WRC 1023 (core)	3
Natural Sciences core - Level I	3
U.S. History & Diversity core	3
Total semester hours	*15*
Third Semester	
ACC 2013	3
ECO 2013* (core and major)	3
MS 1023	3
POL 1013 (core)	3
Literature core	3
Total semester hours	*15*
Fourth Semester	
ACC 2033	3
ECO 2023*	3
MS 3043	3
POL 1133 or POL 1213 (core)	3
Natural Sciences core - Level II	3
Total semester hours	*15*
Fifth Semester	
ACC 3023	3
ACC 3113	3
IS 3003	3
MGT 3003	3
MS 3053	3
Total semester hours	*15*
Sixth Semester	
ACC 3033	3
ACC 3123	3
FIN 3014	4
GBA 2013	3
MGT 3013	3
Total semester hours	*16*
Seventh Semester	
ACC 3043	3
ACC 4013	3
BLW 3013	3
MKT 3013	3
Non-accounting or non-business elective	3
Total semester hours	*15*
Eighth Semester	
ACC 4163	3
ACC 4933 or ACC 4963	3
MGT 4893	3
Non-accounting or non-business elective	2
World Society & Issues core	3
Total semester hours	*14*

* ECO 2013 and ECO 2023 may be taken in either sequence.

Five-Year (150-Hour) Professional Accounting Program

The Five-Year Professional Accounting Program is a 3/2 degree program. Undergraduate accounting majors should apply for admission to the program during the second semester of their junior year (the semester in which they are taking Intermediate Accounting II). Once admitted, these students are allowed to take graduate courses while, technically, undergraduate students. Students admitted to the 150-hour program will be reclassified from undergraduate to graduate student status when they have completed 120 semester credit hours of coursework toward their degree. In this program the degree plan for the Bachelor of Business Administration (B.B.A.) in Accounting is combined with that of the Master of Accountancy (MACY). The advantage of the program is that it allows accounting majors to spread the graduate courses required for the MACY degree over the fourth and fifth years of the 150-hour program. Upon successful completion of the 150-hour program, students will be simultaneously awarded the B.B.A. in Accounting and the Master of Accountancy (MACY) degrees.

Admission Criteria: To be admitted to the Five-Year (150-Hour) Professional Accounting Program, students must meet the following criteria:

1. Be a declared major in accounting
2. Have an overall grade point average of 3.0, a grade point average of 3.0 in accounting courses taken, and an acceptable score on the Graduate Management Admission Test (GMAT), and
3. Have completed a minimum of 6 hours of upper-level undergraduate accounting courses including ACC 3023 Intermediate Accounting I.

In addition, the student must have completed at least 12 hours of upper-level undergraduate accounting courses by the end of the first semester following admission into the program.

DEPARTMENT OF ECONOMICS

Mission Statement

The mission of the Department of Economics at The University of Texas at San Antonio is to offer courses and degree programs at both the undergraduate and graduate levels that provide students with the opportunity to gain the necessary theoretical and quantitative tools in economics such that they can understand and apply economics in their daily lives, seek advanced degrees in economics, pursue careers in the global marketplace, and engage in public policy-making. It is also the mission of the department to provide an environment for its faculty and students to engage in research that will further the understanding of economics and enhance the reputation of the Department, the College of Business, and The University.

The Department of Economics offers both a Bachelor of Arts degree and a Bachelor of Business Administration degree in Economics. Economics is a highly versatile major that assists students in pursuing a variety of careers, including positions in business, the public sector, the legal field, and politics, where knowledge of economics is a fundamental asset. The department also offers a minor in economics that is open to all majors in the University.

Department Honors

The Department of Economics offers the opportunity for certain of its outstanding students to achieve the designation of Honors in Major and provides the opportunity for advanced study under close faculty supervision.

Selection for honors designation is based on the student's academic performance and recommendation by the Department Undergraduate Program Committee (UPC) in consultation with the faculty of the student's major discipline. To be eligible for the designation, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. To enroll in honors thesis courses and to graduate with the honors designation, these minimum grade point averages must be maintained. Students applying for Honors in Major are expected to enroll in the appropriate honors thesis course during their final two semesters. The completed thesis must be approved by the supervising faculty sponsor from the student's discipline and the UPC. Students interested in this program should contact the Department of Economics office for additional information. Department honors can be attained independent of, or in addition to, University Honors.

Bachelor of Business Administration Degree in Economics

The minimum semester credit hours for the Bachelor of Business Administration degree in Economics is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Economics must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Economics.

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC	2013	Principles of Accounting I
ACC	2033	Principles of Accounting II
BLW	3013	Business Law
COM	1053	Business and Professional Speech
ECO	2013	Introductory Macroeconomics (satisfies Economics Core Curriculum requirement)
ECO	2023	Introductory Microeconomics
FIN	3014	Principles of Business Finance
GBA	2013	Social and Ethical Issues in Business
IS	1403	Business Information Systems Fluency
IS	3003	Principles of Information Systems for Management
MAT	1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement) (Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)
MGT	3003	Business Communication and Professional Development
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MGT	4893	Management Strategy (taken in semester of graduation)
MKT	3013	Principles of Marketing
MS	1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)
MS	3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)
MS	3053	Management Science and Operations Technology

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Degree Requirements

A. 21 upper-division semester credit hours in the major:

ECO	3033	Economics of Managerial Decisions
ECO	3053	Aggregate Economic Analysis
ECO	3113	Introduction to Mathematical Economics
ECO	3123	Introduction to Econometrics and Business Forecasting

9 additional semester credit hours of upper-division electives in economics. Students are strongly encouraged to complete the specified required courses before enrolling in upper-division electives. Additional information on degree plans under the Bachelor of Business Administration degree is available in the College of Business Undergraduate Advising Center and the Department of Economics.

B. 3 semester credit hours of upper-division, non-economics electives within the College of Business

C. 5 semester credit hours of lower-division or upper-division business or non-business electives

Course Sequence Guide for B.B.A. Degree in Economics

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with an academic advisor in the College of Business Undergraduate Advising Center for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
MAT 1033 (core and major)	3
WRC 1013 (core)	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Second Semester	
COM 1053	3
IS 1403	3
WRC 1023 (core)	3
Natural Sciences core - Level I	3
U.S. History & Diversity core	3
Total semester hours	*15*

Courses	Credit Hours
Third Semester	
ACC 2013	3
ECO 2013* (core and major)	3
MS 1023	3
POL 1013 (core)	3
Literature core	3
Total semester hours	*15*
Fourth Semester	
ACC 2033	3
ECO 2023*	3
MS 3043	3
POL 1133 or POL 1213 (core)	3
Natural Sciences core - Level II	3
Total semester hours	*15*
Fifth Semester	
ECO 3053	3
IS 3003	3
MGT 3003	3
MGT 3013	3
MS 3053	3
Total semester hours	*15*
Sixth Semester	
ECO 3033	3
ECO 3113	3
FIN 3014	4
GBA 2013	3
MKT 3013	3
Total semester hours	*16*
Seventh Semester	
BLW 3013	3
ECO 3123	3
Business elective (upper division)	3
Business or non-business elective	2
Economics elective (upper division)	3
Total semester hours	*14*
Eighth Semester	
MGT 4893	3
Business or non-business elective	3
Economics elective (upper division)	3
Economics elective (upper division)	3
World Society & Issues core	3
Total semester hours	*15*

* ECO 2013 and ECO 2023 may be taken in either sequence.

Bachelor of Arts Degree in Economics

The minimum semester credit hours for the Bachelor of Arts degree in Economics is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Economics must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Economics.

In addition to the Core Curriculum requirements, all candidates for the degree must complete the following degree requirements.

Degree Requirements

A. 39 semester credit hours of required courses in the major:

COM	1053	Business and Professional Speech
ECO	2013	Introductory Macroeconomics (satisfies Economics Core Curriculum requirement)
ECO	2023	Introductory Microeconomics
ECO	3013	Theory of Price
ECO	3053	Aggregate Economic Analysis
STA	1053	Basic Statistics

21 semester credit hours in upper-division economics courses. Students are strongly encouraged to complete the specified required courses before enrolling in upper-division electives. Additional information on degree plans under the Bachelor of Arts degree in Economics is available in the College of Business Undergraduate Advising Center and the Department of Economics.

B. 12 semester credit hours of social science electives selected from American studies (AMS), anthropology (ANT), bicultural-bilingual studies (BBL), criminal justice (CRJ), geography (GRG), history (HIS), legal studies (LGS), political science (POL), psychology (PSY), or sociology (SOC).

C. 30 additional semester credit hours of lower-division or upper-division business or non-business electives which ensures that at least 39 semester credit hours of upper-division credit are earned.

Course Sequence Guide for B.A. Degree in Economics

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with an academic advisor in the College of Business Undergraduate Advising Center for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
MAT 1033 (core and major)	3
WRC 1013 (core)	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Second Semester	
COM 1053	3
STA 1053	3
WRC 1023 (core)	3
Natural Sciences core - Level I	3
U.S. History & Diversity core	3
Total semester hours	*15*
Third Semester	
ECO 2013* (core and major)	3
POL 1013 (core)	3
Literature core	3
Natural Sciences core - Level II	3
Social science elective	3
Total semester hours	*15*
Fourth Semester	
ECO 2023*	3
POL 1133 or POL 1213 (core)	3
Business or non-business elective	3
Social science elective	3
World Society & Issues core	3
Total semester hours	*15*
Fifth Semester	
ECO 3013	3
ECO 3053	3
Business or non-business elective	3
Economics elective (upper division)	3
Social science elective	3
Total semester hours	*15*
Sixth Semester	
Business or non-business elective	3
Business or non-business elective (upper division)	3
Economics elective (upper division)	3
Economics elective (upper division)	3
Social science elective	3
Total semester hours	*15*
Seventh Semester	
Business or non-business elective	3
Business or non-business elective (upper division)	3
Business or non-business elective (upper division)	3
Economics elective (upper division)	3
Economics elective (upper division)	3
Total semester hours	*15*
Eighth Semester	
Business or non-business elective	3
Business or non-business elective	3
Business or non-business elective (upper division)	3
Economics elective (upper division)	3
Economics elective (upper division)	3
Total semester hours	*15*

* ECO 2013 and ECO 2023 may be taken in either sequence.

Minor in Economics

The Minor in Economics is open to all majors in the University. All students pursuing the Minor in Economics must complete 18 semester credit hours.

A. 6 semester credit hours of required courses:

ECO 2013 Introductory Macroeconomics
ECO 2023 Introductory Microeconomics

B. 12 additional semester credit hours of upper-division economics courses

To declare a Minor in Economics, obtain advice, and seek approval of substitutions for course requirements, students must consult the College of Business Undergraduate Advising Center.

DEPARTMENT OF ENTREPRENEURSHIP AND TECHNOLOGY MANAGEMENT

The Department of Entrepreneurship and Technology Management offers an undergraduate degree program in Entrepreneurship and a minor in Technology Management which is open only to non-business majors.

Bachelor of Business Administration Degree in Entrepreneurship

The minimum number of semester credit hours for the Bachelor of Business Administration degree in Entrepreneurship is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Entrepreneurship must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Economics.

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC	2013	Principles of Accounting I
ACC	2033	Principles of Accounting II
BLW	3013	Business Law
COM	1053	Business and Professional Speech
ECO	2013	Introductory Macroeconomics (satisfies Economics Core Curriculum requirement)
ECO	2023	Introductory Microeconomics
FIN	3014	Principles of Business Finance
GBA	2013	Social and Ethical Issues in Business
IS	1403	Business Information Systems Fluency
IS	3003	Principles of Information Systems for Management
MAT	1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement) (Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)
MGT	3003	Business Communication and Professional Development
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MGT	4893	Management Strategy (taken in semester of graduation)
MKT	3013	Principles of Marketing
MS	1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)
MS	3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)
MS	3053	Management Science and Operations Technology

In addition to the Core Curriculum requirements and the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Degree Requirements

A. 15 semester credit hours of required courses in the major:

ENT	4123	Commercialization and Enterprise Planning
ENT	4873	Entrepreneurship
ENT	4883	Small Business Management
ENT	4903	Practicum in Small Business and Entrepreneurship
MGT	3023	Understanding People and Organizations

B. 3 semester credit hours of required support work:

FIN	4333	Business Finance for Entrepreneurs

C. 6 semester credit hours of support work from the following upper-division entrepreneurship or management of technology courses:

ENT	4223	Managing the Entrepreneurial Team
ENT	4523	Microlending Entrepreneurial Startups
ENT	4623	Tools and Objectives of the Social Enterprise
ENT	4933	Internship in Entrepreneurship
ENT	4951-3	Special Studies in Entrepreneurship
MOT	4023	Essentials of Technology Management
MOT	4143	Introduction to Project Management
MOT	4203	Strategic Management of Technology and Innovation
MOT	4313	Disruptive Innovations
MOT	4951-3	Special Studies in Management of Technology

D. 3 semester credit hours of directed electives:

COM	2113	Public Speaking
COM	3633	Professional Presentation
ENG	2413	Technical Writing

E. 2 semester credit hours of lower-division or upper-division business or non-business electives

Course Sequence Guide for B.B.A. Degree in Entrepreneurship

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with an academic advisor in the College of Business Undergraduate Advising Center for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
MAT 1033 (core and major)	3
WRC 1013 (core)	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Second Semester	
COM 1053	3
IS 1403	3
WRC 1023 (core)	3
Natural Sciences core - Level I	3
U.S. History & Diversity core	3
Total semester hours	15
Third Semester	
ACC 2013	3
ECO 2013* (core and major)	3
MS 1023	3
POL 1013 (core)	3
Literature core	3
Total semester hours	*15*
Fourth Semester	
ACC 2033	3
ECO 2023*	3
FIN 3014	4
MS 3043	3
POL 1133 or POL 1213 (core)	3
Total semester hours	*16*
Fifth Semester	
GBA 2013	3
FIN 4333	3
MGT 3003	3
MGT 3013	3
MS 3053	3
Total semester hours	*15*
Sixth Semester	
BLW 3013	3
ENT 4123	3
IS 3003	3
MGT 3023	3
Natural Sciences core - Level II	3
Total semester hours	*15*
Seventh Semester	
ENT 4873	3
ENT 4883	3
MKT 3013	3
Directed elective	3
ENT or MOT course option in major (upper division)	3
Total semester hours	*15*
Eighth Semester	
ENT 4903	3
MGT 4893	3
Business or non-business elective	2
ENT or MOT course option in major (upper division)	3
World Society & Issues core	3
Total semester hours	*14*

* ECO 2013 and ECO 2023 may be taken in either sequence.

Minor in Technology Management

The Minor in Technology Management is only open to non-business majors in the University. The number of required semester credit hours for this minor is 18.

A. The following courses are required:

ACC	2013	Principles of Accounting I
FIN	3003	Survey of Finance
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MKT	3013	Principles of Marketing
MOT	4143	Introduction to Project Management

B. One elective course must be selected from the following:

MOT	4023	Essentials of Technology Management
MS	3403	Logistics Management

To declare a Minor in Technology Management, obtain advice, and seek approval of course substitutions for course requirements, students must consult the College of Business Undergraduate Advising Center.

DEPARTMENT OF FINANCE

Mission Statement

The Department of Finance is committed to contributing knowledge in the field of finance through research and education. The department strives to provide high-quality undergraduate and graduate programs in finance and supports other programs within the College of Business. Theory and application are melded to provide an environment in which new ideas are developed to meet the challenges and transformations arising in a changing world of financial practices and innovations, thereby preparing students for successful careers and providing employers with a workforce trained to shape the future. The Department supports high-quality academic research in all areas of finance.

The Department of Finance offers a Bachelor of Business Administration degree in Finance and a Bachelor of Business Administration degree in Real Estate Finance and Development. A major in finance gives students the opportunity to learn the basic financial theories and applications needed in managerial financial decision making. Areas in finance include corporate finance, investments, insurance, real estate, and financial institutions and markets. The degree in real estate finance and development is designed for students interested in managing businesses associated with real estate and the planning, financing, development, and construction of building projects. The department offers a Minor in Finance and a Minor in Real Estate that are available only to students pursuing a Bachelor of Business Administration (B.B.A.) degree. Minors in Construction Management and in Facility and Property Management are only available to students pursuing a Real Estate Finance and Development degree.

Department Honors

The Department of Finance offers the opportunity for certain of its outstanding students to achieve the designation of Honors in Major and provides the opportunity for advanced study under close faculty supervision.

Selection for honors designation is based on the student's academic performance and recommendation by the Department Undergraduate Program Committee (UPC) in consultation with the faculty of the student's major discipline. To be eligible for the designation, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. To enroll in honors thesis courses and to graduate with the honors designation, these minimum grade point averages must be maintained. Students applying for Honors in Major are expected to enroll in the appropriate honors thesis course during their final two semesters. The completed thesis must be approved by the supervising faculty sponsor from the student's discipline and the UPC. Students interested in this program should contact the Department of Finance office for additional information. Department honors can be attained independent of, or in addition to, University Honors.

Bachelor of Business Administration Degree in Finance

The minimum number of semester credit hours for the Bachelor of Business Administration degree in Finance is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Finance must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Economics.

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC	2013	Principles of Accounting I
ACC	2033	Principles of Accounting II
BLW	3013	Business Law
COM	1053	Business and Professional Speech
ECO	2013	Introductory Macroeconomics (satisfies Economics Core Curriculum requirement)
ECO	2023	Introductory Microeconomics
FIN	3014	Principles of Business Finance
GBA	2013	Social and Ethical Issues in Business
IS	1403	Business Information Systems Fluency
IS	3003	Principles of Information Systems for Management
MAT	1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement) (Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)
MGT	3003	Business Communication and Professional Development
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MGT	4893	Management Strategy (taken in semester of graduation)
MKT	3013	Principles of Marketing
MS	1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)
MS	3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)
MS	3053	Management Science and Operations Technology

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Degree Requirements

A. 27 upper-division semester credit hours in the major and supporting area:

ACC	3023	Intermediate Accounting I
ACC	3033	Intermediate Accounting II
FIN	3023	Intermediate Corporate Finance
FIN	3033	Principles of Investment
FIN	3313	Money and Banking
FIN	4893	Cases and Problems in Finance

9 additional semester credit hours of finance electives; FIN 4873 Computer Modeling of Financial Applications is recommended as one of these finance electives. FIN 3003 Survey of Finance may not be applied to meeting this requirement.

B. 2 semester credit hours of lower-division or upper-division business or non-business electives

Course Sequence Guide for B.B.A. Degree in Finance

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with an academic advisor in the College of Business Undergraduate Advising Center for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students should make every attempt to take the courses in bold in the indicated sequence. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
MAT 1033 (core and major)	3
WRC 1013 (core)	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Second Semester	
COM 1053	3
IS 1403	3
WRC 1023 (core)	3
Natural Sciences core - Level I	3
U.S. History & Diversity core	3
Total semester hours	*15*
Third Semester	
ACC 2013	3
ECO 2013* (core and major)	3
MS 1023	3
POL 1013 (core)	3
Literature core	3
Total semester hours	*15*
Fourth Semester	
ACC 2033	3
ECO 2023*	3
FIN 3014	4
MS 3043	3
POL 1133 or POL 1213 (core)	3
Total semester hours	*16*
Fifth Semester	
ACC 3023	3
FIN 3023	3
MGT 3003	3
MS 3053	3
Natural Sciences core - Level II	3
Total semester hours	*15*
Sixth Semester	
ACC 3033	3
FIN 3033	3
FIN 3313	3
GBA 2013	3
IS 3003	3
Total semester hours	*15*
Seventh Semester	
BLW 3013	3
MGT 3013	3
MKT 3013	3
Finance elective (upper division)	3
Finance elective (upper division)	3
Total semester hours	*15*
Eighth Semester	
FIN 4893	3
MGT 4893	3
Business or non-business elective	2
Finance elective (upper division)	3
World Society & Issues core	3
Total semester hours	*14*

* ECO 2013 and ECO 2023 may be taken in either sequence.

Bachelor of Business Administration Degree in Real Estate Finance and Development

The Bachelor of Business Administration degree in Real Estate Finance and Development offers students the opportunity to minor in Construction Management, Facility and Property Management, or Finance. The Construction Management minor is offered by the College of Business with support from the Architecture program. Architecture and Construction Science and Management courses are described under the College of Architecture. The minimum number of semester credit hours for the B.B.A. in Real Estate Finance and Development is 120, 39 of which must be at the upper-division level. The minimum number of hours with the minor in Construction Management is 124, the minimum number of hours with the minor in Facility and Property Management is 121, and the minimum number of hours with the minor in Finance is 120.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge requirements, and the degree requirements, which are listed below. All real estate related courses are listed under the Real Estate (RFD) course description heading.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Real Estate Finance and Development must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Economics.

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC	2013	Principles of Accounting I
ACC	2033	Principles of Accounting II
BLW	3013	Business Law
COM	1053	Business and Professional Speech
ECO	2013	Introductory Macroeconomics (satisfies Economics Core Curriculum requirement)
ECO	2023	Introductory Microeconomics
FIN	3014	Principles of Business Finance
GBA	2013	Social and Ethical Issues in Business
IS	1403	Business Information Systems Fluency
IS	3003	Principles of Information Systems for Management
MAT	1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement) (Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)
MGT	3003	Business Communication and Professional Development
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MGT	4893	Management Strategy (taken in semester of graduation)
MKT	3013	Principles of Marketing
MS	1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)
MS	3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)
MS	3053	Management Science and Operations Technology

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Degree Requirements

A. 18 semester credit hours of required courses:

FIN	3433	Principles of Real Estate
FIN	4713	Mortgage Banking and Real Estate Finance
FIN	4723	Principles of Real Estate Investment
RFD	3523	Real Estate Law (Students completing the Construction Management minor may substitute CSM 4633 Construction Law.)
RFD	3533	Principles of Construction for Real Estate Professionals (Students completing the Construction Management minor must take COA 1133 in lieu of RFD 3533.)
RFD	4733	Principles of Sustainable Real Estate Development

B. Completion of Option 1 or Option 2 listed below:

Option 1: 6 semester credit hours of additional real estate (RFD) or facility and property management (FM) courses, and 5 semester credit hours of lower-division or upper-division business or non-business electives

Option 2: Completion of a Minor in Construction Management, a Minor in Facility and Property Management, or a Minor in Finance.

Course Sequence Guide for B.B.A. Degree in Real Estate Finance and Development – Option 1

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with an academic advisor in the College of Business Undergraduate Advising Center for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students should make every attempt to take the courses in bold in the indicated sequence. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
MAT 1033 (core and major)	3
WRC 1013 (core)	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Second Semester	
COM 1053	3
IS 1403	3
WRC 1023 (core)	3
Natural Sciences core - Level I *	3
U.S. History & Diversity core	3
Total semester hours	*15*
Third Semester	
ACC 2013	3
ECO 2013** (core and major)	3
MS 1023	3
POL 1013 (core)	3
Natural Sciences core - Level II	3
Total semester hours	*15*
Fourth Semester	
ACC 2033	3
ECO 2023**	3
FIN 3014	4
GBA 2013	3
MS 3043	3
Total semester hours	*16*
Fifth Semester	
BLW 3013	3
FIN 3433	3
MGT 3003	3
MS 3053	3
POL 1133 or POL 1213 (core)	3
Total semester hours	*15*
Sixth Semester	
FIN 4723	3
MGT 3013	3
MKT 3013	3
RFD 3523	3
RFD elective	3
Total semester hours	*15*
Seventh Semester	
FIN 4713	3
IS 3003	3
RFD 3533	3
Business or non-business elective	3
Literature core	3
Total semester hours	*15*
Eighth Semester	
MGT 4893	3
RFD 4733	3
Business or non-business elective	2
Directed elective	3
World Society & Issues core	3
Total semester hours	*14*

* Facility and Property Management Minors should take ES 2013 to meet the Science Level One core requirement.

** ECO 2013 and ECO 2023 may be taken in either sequence.

Minor in Construction Management

The minor in Construction Management is available only to students pursuing a B.B.A. in Real Estate Finance and Development. All students pursing the minor in Construction Management must complete the following 18 semester credit hours as well as the Core, the CBK, and B.B.A. in Real Estate Finance and Development major requirements listed in part A above:

A. 15 semester credit hours of required courses:

BLW	3013	Business Law
CSM	2323	Construction Documents
CSM	4013	Construction Estimating I
CSM	4513	Construction Management I
RFD	4903	Internship in Construction Management

B. 3 semester hours from the following:

CSM	4023	Construction Estimating II*
CSM	4523	Construction Management II*
CSM	4613	Sustainable Building Practice

* Space may be limited in these classes. Students must obtain permission from the coordinator of the Construction Science and Management program to enroll.

To declare a Minor in Construction Management and to obtain advice, students must consult the College of Business Undergraduate Advising Center.

Minor in Facility and Property Management

The minor in Facility and Property Management is available only to students pursuing a B.B.A. in Real Estate Finance and Development degree. All students pursuing the minor in Facility and Property Management must complete the following 18 semester credit hours

as well as the Core, the CBK, and B.B.A. in Real Estate Finance and Development major requirements listed in part A above:

A. 9 semester credit hours of required courses:

BLW	3013	Business Law
FM	4303	Facility and Property Management Policies and Procedures
FM	4313	Facility and Property Management Practices

B. 6 semester credit hours from the following

FM	4233	Sporting and Event Facility Management
MGT	3613	Managing Human Resources
MOT	4143	Introduction to Project Management
		or
MS	4333	Project Management

C. 3 semester credit hours of support work:

ES	2013	Introduction to Environmental Systems I (this course also satisfies Level One Science core curriculum requirement)

To declare a Minor in Facility and Property Management and to obtain advice, students must consult the College of Business Undergraduate Advising Center.

Minor in Finance

The Minor in Finance is available only to students pursuing a B.B.A. degree. All students pursuing the Minor in Finance must complete 19 semester credit hours of coursework.

A. 10 semester credit hours of required courses:

FIN	3014	Principles of Business Finance
FIN	3033	Principles of Investment
FIN	3313	Money and Banking

B. 9 additional semester credit hours of upper-division finance electives. FIN 3003 Survey of Finance may not be applied to meeting this requirement.

To declare a Minor in Finance and obtain advice, students must consult the College of Business Undergraduate Advising Center.

Minor in Real Estate

The Minor in Real Estate is available to students pursuing a B.B.A. degree. All students pursuing the Minor in Real Estate must complete 19 semester credit hours of coursework.

A. 7 semester credit hours of required courses:

FIN	3014	Principles of Business Finance
FIN	3433	Principles of Real Estate

B. 12 additional semester credit hours of real estate courses

To declare a Minor in Real Estate and obtain advice, students must consult the College of Business Undergraduate Advising Center.

DEPARTMENT OF INFORMATION SYSTEMS AND CYBER SECURITY

The Department of Information Systems and Cyber Security offers two undergraduate degree programs: one with a major in Information Systems, and one with a major in Infrastructure Assurance. The Department offers minors in Digital Forensics, Electronic Commerce, Information Systems, Infrastructure Assurance and Security, and Network and Data Center Management which are open to all majors in the University.

Department Honors

The Department of Information Systems and Cyber Security offers the opportunity for certain of its outstanding students to achieve the designation of Honors in Major and provides the opportunity for advanced study under close faculty supervision.

Selection for Honors designation is based on the student's academic performance and recommendation by the Department Undergraduate Program Committee (UPC) in consultation with the faculty of the student's major discipline. To be eligible for the designation, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major. To enroll in honors thesis courses and to graduate with the Honors designation, these minimum grade point averages must be maintained. Students applying for Honors in Major are expected to enroll in the appropriate honors thesis course during the final two semesters. The completed honors thesis must be approved by the supervising faculty sponsor from the student's discipline and the UPC. Students interested in this program should contact the Department Chair for additional information. Major honors can be obtained independent of, or in addition to, University Honors.

Bachelor of Business Administration Degree in Information Systems

The minimum number of semester credit hours for the Bachelor of Business Administration degree in Information Systems is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Information Systems must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Economics.

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC	2013	Principles of Accounting I
ACC	2033	Principles of Accounting II
BLW	3013	Business Law
COM	1053	Business and Professional Speech
ECO	2013	Introductory Macroeconomics (satisfies Economics Core Curriculum requirement)
ECO	2023	Introductory Microeconomics
FIN	3014	Principles of Business Finance
GBA	2013	Social and Ethical Issues in Business
IS	1403	Business Information Systems Fluency
IS	3003	Principles of Information Systems for Management
MAT	1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement) (Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)
MGT	3003	Business Communication and Professional Development
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MGT	4893	Management Strategy (taken in semester of graduation)
MKT	3013	Principles of Marketing
MS	1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)
MS	3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)
MS	3053	Management Science and Operations Technology

In addition to the Core Curriculum requirements and the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Degree Requirements

A. 21 semester credit hours of information systems courses in the major:

15 required semester credit hours as follows:

IS	3063	Database Management for Information Systems
IS	3073	Application Development
IS	3413	Introduction to Telecommunications for Business
IS	4053	Systems Analysis and Design
IS	4063	Advanced Topics in Information Systems

6 additional semester credit hours of upper-division information systems coursework. Students may also choose one of the following as 3 hours of the additional 6 hours of information systems electives:

MOT	4023	Essentials of Technology Management
MOT	4143	Introduction to Project Management

B. 8 semester credit hours of information systems support work:

IS	2031	Introduction to Computer Concepts for Information Systems Laboratory
IS	2033	Introduction to Computer Concepts for Information Systems
IS	2041	Intermediate Object-Oriented Programming Laboratory
IS	2043	Intermediate Object-Oriented Programming

Course Sequence Guide for B.B.A. Degree in Information Systems

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with an academic advisor in the College of Business Undergraduate Advising Center for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
MAT 1033 (core and major)	3
WRC 1013 (core)	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Second Semester	
COM 1053	3
IS 1403	3
WRC 1023 (core)	3
U.S. History & Diversity core	3
World Society & Issues core	3
Total semester hours	*15*
Third Semester	
ACC 2013	3
ECO 2013* (core and major)	3
IS 2031	1
IS 2033	3
MS 1023	3
POL 1013 (core)	3
Total semester hours	*16*
Fourth Semester	
ACC 2033	3
ECO 2023*	3
IS 2041	1
IS 2043	3
IS 3003	3
MS 3043	3
Total semester hours	*16*

Courses	Credit Hours
Fifth Semester	
IS 3063	3
IS 3073	3
MS 3053	3
POL 1133 or POL 1213 (core)	3
Natural Sciences core - Level I	3
Total semester hours	*15*
Sixth Semester	
FIN 3014	4
IS 3413	3
MGT 3003	3
MGT 3013	3
Natural Sciences core - Level II	3
Total semester hours	*16*
Seventh Semester	
GBA 2013	3
IS 4053	3
MKT 3013	3
IS elective (upper division)	3
Literature core	3
Total semester hours	*15*
Eighth Semester	
BLW 3013	3
IS 4063	3
MGT 4893	3
IS elective (upper division)	3
Total semester hours	*12*

* ECO 2013 and ECO 2023 may be taken in either sequence.

Bachelor of Business Administration Degree in Infrastructure Assurance

The minimum number of semester credit hours for the Bachelor of Business Administration degree in Infrastructure Assurance is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Infrastructure Assurance must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Economics.

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC	2013	Principles of Accounting I
ACC	2033	Principles of Accounting II
BLW	3013	Business Law
COM	1053	Business and Professional Speech
ECO	2013	Introductory Macroeconomics (satisfies Economics Core Curriculum requirement)
ECO	2023	Introductory Microeconomics
FIN	3014	Principles of Business Finance
GBA	2013	Social and Ethical Issues in Business
IS	1403	Business Information Systems Fluency
IS	3003	Principles of Information Systems for Management
MAT	1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement) (Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)
MGT	3003	Business Communication and Professional Development
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MGT	4893	Management Strategy (taken in semester of graduation)
MKT	3013	Principles of Marketing
MS	1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)
MS	3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)
MS	3053	Management Science and Operations Technology

In addition to the Core Curriculum requirements and the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Degree Requirements

A. 21 semester credit hours of information systems courses in the major:

IS	3033	Operating Systems
IS	3413	Introduction to Telecommunications for Business
IS	3423	Network Security
IS	3513	Information Assurance and Security

9 semester credit hours selected from the following:

IS	3523	Intrusion Detection and Incident Response
IS	4463	Secure Electronic Commerce
IS	4473	Information Assurance Policy
IS	4483	Digital Forensic Analysis I
IS	4493	Access Controls
IS	4513	Cyber and Physical Systems

Students may also choose one of the following as 3 hours of the additional 9 hours of information systems electives:

MOT	4023	Essentials of Technology Management
MOT	4143	Introduction to Project Management

B. 8 semester credit hours of information systems support work:

IS	2031	Introduction to Computer Concepts for Information Systems Laboratory
IS	2033	Introduction to Computer Concepts for Information Systems
IS	2041	Intermediate Object-Oriented Programming Laboratory
IS	2043	Intermediate Object-Oriented Programming

Course Sequence Guide for B.B.A. Degree in Infrastructure Assurance

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with an academic advisor in the College of Business Undergraduate Advising Center for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
MAT 1033 (core and major)	3
WRC 1013 (core)	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Second Semester	
COM 1053	3
IS 1403	3
WRC 1023 (core)	3
U.S. History & Diversity core	3
World Society & Issues core	3
Total semester hours	*15*
Third Semester	
ACC 2013	3
ECO 2013* (core and major)	3
IS 2031	1
IS 2033	3
MS 1023	3
POL 1013 (core)	3
Total semester hours	*16*
Fourth Semester	
ACC 2033	3
IS 2041	1
IS 2043	3
IS 3003	3
MS 3043	3
Natural Sciences core - Level I	3
Total semester hours	*16*
Fifth Semester	
ECO 2023*	3
IS 3033	3
IS 3413	3
MS 3053	3
POL 1133 or POL 1213 (core)	3
Total semester hours	*15*
Sixth Semester	
IS 3423	3
IS 3513	3
MGT 3003	3
MGT 3013	3
Natural Sciences core - Level II	3
Total semester hours	*15*
Seventh Semester	
FIN 3014	4
GBA 2013	3
MKT 3013	3
IS elective (upper division)	3
Literature core	3
Total semester hours	*16*
Eighth Semester	
BLW 3013	3
MGT 4893	3
IS elective (upper division)	3
IS elective (upper division)	3
Total semester hours	*12*

* ECO 2013 and ECO 2023 may be taken in either sequence.

Minor in Digital Forensics

The Minor in Digital Forensics is open to all majors in the University. A student majoring in Information Systems will be required to take 18 semester credit hours of coursework. Other majors may be required to take additional hours depending on their academic background.

The following courses are required:

IS	3433	Introduction to Digital Forensics
IS	3513	Information Assurance and Security
IS	3523	Intrusion Detection and Incident Response

IS	3533	Cyber Law
IS	4483	Digital Forensic Analysis I
IS	4523	Digital Forensic Analysis II

To declare a Minor in Digital Forensics, obtain advice, or seek approval of course substitutions for course requirements, students must consult the College of Business Undergraduate Advising Center.

Minor in Electronic Commerce

The Minor in Electronic Commerce is open to all majors in the University. The number of semester credit hours required for students enrolled as Information Systems majors in the College of Business is 18. Other majors may require additional hours in order to meet prerequisite requirements.

The following courses are required:

IS	3073	Application Development
IS	3413	Introduction to Telecommunications for Business
IS	3513	Information Assurance and Security
IS	4153	Web Site Development
IS	4203	Business Process Re-engineering
IS	4463	Secure Electronic Commerce

To declare a Minor in Electronic Commerce, obtain advice, or seek approval of course substitutions for course requirements, students must consult the College of Business Undergraduate Advising Center.

Minor in Information Systems

The Minor in Information Systems is open to all majors in the University. The number of semester credit hours required for a student in the College of Business is 19. Other students may be required to take additional hours depending on their academic background.

A. The following courses are required:

IS	2041	Intermediate Object-Oriented Programming Laboratory
IS	2043	Intermediate Object-Oriented Programming
IS	3003	Principles of Information Systems for Management
IS	3063	Database Management for Information Systems
IS	3413	Introduction to Telecommunications for Business
IS	4053	Systems Analysis and Design

B. One elective course must be selected from the following:

ACC	3113	Accounting Information Systems
MOT	4023	Essentials of Technology Management
MOT	4143	Introduction to Project Management

or

Any IS junior- or senior-level course that counts for the IS major

To declare a Minor in Information Systems, obtain advice, or seek approval of course substitutions for course requirements, students must consult the College of Business Undergraduate Advising Center.

Minor in Infrastructure Assurance and Security

The Minor in Infrastructure Assurance and Security is open to all majors in the University. A student majoring in Information Systems will be required to take 18 semester credit hours of coursework. Other majors may be required to take additional hours depending on their academic background.

A. The following courses are required:

IS	3413	Introduction to Telecommunications for Business
IS	3423	Network Security
IS	3513	Information Assurance and Security
IS	3523	Intrusion Detection and Incident Response

B. Two elective courses must be selected from the following for 6 semester credit hours:

IS	3033	Operating Systems
IS	4463	Secure Electronic Commerce
IS	4473	Information Assurance Policy
IS	4483	Digital Forensic Analysis I
IS	4493	Access Controls
IS	4513	Cyber and Physical Systems

Students may also choose one of the following as 3 hours of the additional 6 hours of information systems electives:

MOT	4023	Essentials of Technology Management
MOT	4143	Introduction to Project Management

To declare a Minor in Infrastructure Assurance and Security, obtain advice, or seek approval of course substitutions for course requirements, students must consult the College of Business Undergraduate Advising Center.

Minor in Network and Data Center Management

The Minor in Network and Data Center Management is open to all majors in the University. A student majoring in Information Systems or Infrastructure Assurance will be required to take 21 semester credit hours of coursework. Other majors may be required to take additional hours depending on their academic background.

The following courses are required:

FM	4213	Power and Air Conditioning
IS	3453	Networking Fundamentals
IS	3513	Information Assurance and Security
IS	3523	Intrusion Detection and Incident Response
IS	4033	Network Operations
IS	4223	Emerging Network Technologies
MOT	4143	Introduction to Project Management

To declare a Minor in Network and Data Center Management, obtain advice, or seek approval of course substitutions for course requirements, students must consult with the College of Business Undergraduate Advising Center.

DEPARTMENT OF MANAGEMENT

The Department of Management offers an undergraduate degree program with a major in management. A concentration within management in international business may also be pursued. The Department also offers an undergraduate degree program with a major in human resource management. The Department offers minors in international management and management available only to students pursuing a Bachelor of Business Administration (B.B.A.) degree. The management major and the management major with a concentration in international business cannot be combined into a double major.

Department Honors

The Department of Management offers the opportunity for certain of its outstanding students to achieve the designation of Honors in Major and provides the opportunity for advanced study under close faculty supervision.

The Department Undergraduate Programs Committee (UPC) bases selection for honors designation on the student's academic performance and recommendation. To be eligible for the designation, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. To enroll in honors thesis courses and to graduate with the honors designation, these minimum grade point averages must be maintained. Students applying for Honors in Major are expected to enroll in the appropriate honors thesis course during their final two semesters. The supervising faculty sponsor from the student's discipline and the UPC must approve the completed thesis. Students interested in this program should contact the Department Chair for additional information. Department honors can be attained independent of, or in addition to, University Honors.

Bachelor of Business Administration Degree in Management

The minimum number of semester credit hours required for this degree is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Management must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Economics.

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC	2013	Principles of Accounting I
ACC	2033	Principles of Accounting II
BLW	3013	Business Law
COM	1053	Business and Professional Speech
ECO	2013	Introductory Macroeconomics (satisfies Economics Core Curriculum requirement)
ECO	2023	Introductory Microeconomics
FIN	3014	Principles of Business Finance
GBA	2013	Social and Ethical Issues in Business
IS	1403	Business Information Systems Fluency
IS	3003	Principles of Information Systems for Management
MAT	1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement) (Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)
MGT	3003	Business Communication and Professional Development
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MGT	4893	Management Strategy (taken in semester of graduation)
MKT	3013	Principles of Marketing
MS	1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)
MS	3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)
MS	3053	Management Science and Operations Technology

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Degree Requirements

A. 15 required upper-division semester credit hours in the major:

MGT	3023	Understanding People and Organizations
MGT	3613	Managing Human Resources
MGT	4213	Designing Organizations
MGT	4923	Leading Organizations and Making Decisions
MGT	4943	Managing Effective Teams and Resolving Conflict

B. 3 semester credit hours of support work in upper-division Management electives

C. 6 semester credit hours of support work selected from College of Business upper-division electives, in addition to the Core Curriculum and CBK requirements. FIN 3003 may not be used as an upper-division elective.

D. 3 semester credit hours of upper-division electives from outside the College of Business, which must have international content. Such international content courses could include, but are not limited to:

GRG	3123	Geography of Latin America
GRG	3133	Geography of Europe
HIS	3303	History of Mexico
HIS	3353	Latin America since Independence
HIS	3523	European Cultural History
POL	3393	Latin American Politics
POL	3403	European Politics
POL	3453	The Politics of Mexico

The courses listed above are examples. Many different types of courses can satisfy the requirement.

E. 2 semester credit hours of lower-division or upper-division business or non-business electives

Course Sequence Guide for B.B.A. Degree in Management

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with an academic advisor in the College of Business Undergraduate Advising Center for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
MAT 1033 (core and major)	3
WRC 1013 (core)	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Second Semester	
COM 1053	3
IS 1403	3
WRC 1023 (core)	3
Natural Sciences core - Level I	3
U.S. History & Diversity core	3
Total semester hours	*15*
Third Semester	
ACC 2013	3
ECO 2013* (core and major)	3
MS 1023	3
POL 1013 (core)	3
Literature core	3
Total semester hours	*15*
Fourth Semester	
ACC 2033	3
ECO 2023*	3
MS 3043	3
POL 1133 or POL 1213 (core)	3
Natural Sciences core - Level II	3
Total semester hours	*15*
Fifth Semester	
GBA 2013	3
MGT 3003	3
MGT 3013	3
MKT 3013	3
MS 3053	3
Total semester hours	*15*
Sixth Semester	
BLW 3013	3
FIN 3014	4
IS 3003	3
MGT 3023	3
MGT 3613	3
Total semester hours	*16*
Seventh Semester	
MGT 4213	3
MGT 4923	3
MGT 4943	3
Business elective (upper division)	3
Non-business elective (upper division)	3
Total semester hours	*15*
Eighth Semester	
MGT 4893	3
Business elective (upper division)	3
Business or non-business elective	2
MGT elective (upper division)	3
World Society & Issues core	3
Total semester hours	*14*

* ECO 2013 and ECO 2023 may be taken in either sequence.

Bachelor of Business Administration Degree in Management with an International Business Concentration

The minimum number of semester credit hours required for this degree is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Management with an International Business Concentration must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Economics.

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC	2013	Principles of Accounting I
ACC	2033	Principles of Accounting II
BLW	3013	Business Law
COM	1053	Business and Professional Speech
ECO	2013	Introductory Macroeconomics (satisfies Economics Core Curriculum requirement)
ECO	2023	Introductory Microeconomics
FIN	3014	Principles of Business Finance
GBA	2013	Social and Ethical Issues in Business
IS	1403	Business Information Systems Fluency
IS	3003	Principles of Information Systems for Management
MAT	1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement) (Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)
MGT	3003	Business Communication and Professional Development
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MGT	4893	Management Strategy (taken in semester of graduation)
MKT	3013	Principles of Marketing
MS	1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)
MS	3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)
MS	3053	Management Science and Operations Technology

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Degree Requirements

A. 9 upper-division semester credit hours of international courses in the major:

MGT	4073	International Management
MGT	4083	Comparative International Management Practices
MKT	4073	International Marketing

B. 9 semester credit hours selected from the following:

ECO	3193	International Economics
ECO	4303	Economics of Developing Countries
ECO	4953	Special Studies in Economics (international topics only)
FIN	4613	Introduction to International Finance
MGT	3023	Understanding People and Organizations
MGT	4933	Internship in Management
MKT	4953	Special Studies in Marketing (international topics only)

or other international business electives as approved by Department of Management faculty through the College of Business Undergraduate Advising Center.

C. 9 semester credit hours of directed elective support work outside the College of Business, as follows (*these courses may be taken to fulfill Core Curriculum requirements; if so, nonbusiness electives must be taken to fulfill the minimum 120 credit hours required for the degree):

1. 3 semester credit hours from the following:

GRG	1023	World Regional Geography*
GRG	3123	Geography of Latin America
GRG	3133	Geography of Europe
GRG	3213	Cultural Geography
GRG	3613	Conservation of Resources
GRG	3633	Geography of Development

2. 3 semester credit hours from the following:

HIS	2533	Introduction to Latin American Civilization*
HIS	2543	Introduction to Islamic Civilization*
HIS	2553	Introduction to East Asian Civilization*
HIS	2563	Introduction to European Civilization
HIS	2573	Introduction to African Civilization*
HIS	2583	Introduction to South Asian Civilization*
HIS	3283	Twentieth-Century Europe
HIS	3303	History of Mexico
HIS	3353	Latin America since Independence

HIS	3523	European Cultural History
HIS	3823	History of American Foreign Relations
IDS	2213	World Civilization since the Fifteenth Century*

3. 3 semester credit hours from the following:

POL	2603	International Politics
POL	2633	Comparative Politics
POL	3393	Latin American Politics
POL	3403	European Politics
POL	3433	Governments and Politics of Southeast Asia
POL	3443	Governments and Politics of East Asia
POL	3453	The Politics of Mexico
POL	3493	Politics of the Middle East
POL	3563	Current Issues in World Politics

D. 2 semester credit hours of lower-division or upper-division business or non-business electives

Course Sequence Guide for B.B.A. Degree in Management with an International Business Concentration

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with an academic advisor in the College of Business Undergraduate Advising Center for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
MAT 1033 (core and major)	3
WRC 1013 (core)	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Second Semester	
COM 1053	3
IS 1403	3
WRC 1023 (core)	3
Natural Sciences core - Level I	3
U.S. History & Diversity core	3
Total semester hours	*15*
Third Semester	
ACC 2013	3
ECO 2013* (core and major)	3
MS 1023	3
POL 1013 (core)	3
Literature core	3
Total semester hours	*15*
Fourth Semester	
ACC 2033	3
ECO 2023*	3
MS 3043	3
POL 1133 or POL 1213 (core)	3
Natural Sciences core - Level II	3
Total semester hours	*15*
Fifth Semester	
GBA 2013	3
MGT 3003	3
MGT 3013	3
MKT 3013	3
MS 3053	3
Total semester hours	*15*
Sixth Semester	
BLW 3013	3
FIN 3014	4
IS 3003	3
MGT 4073	3
MKT 4073	3
Total semester hours	*16*
Seventh Semester	
MGT 4083	3
Directed elective	3
International course option in major	3
International course option in major	3
World Society & Issues core	3
Total semester hours	*15*
Eighth Semester	
MGT 4893	3
Business or non-business elective	2
Directed elective	3
Directed elective	3
International course option in major	3
Total semester hours	*14*

* ECO 2013 and ECO 2023 may be taken in either sequence.

Bachelor of Business Administration Degree in Human Resource Management

The minimum number of semester credit hours required for this degree is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Human Resource Management must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Economics.

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC	2013	Principles of Accounting I
ACC	2033	Principles of Accounting II
BLW	3013	Business Law
COM	1053	Business and Professional Speech
ECO	2013	Introductory Macroeconomics (satisfies Economics Core Curriculum requirement)
ECO	2023	Introductory Microeconomics
FIN	3014	Principles of Business Finance
GBA	2013	Social and Ethical Issues in Business
IS	1403	Business Information Systems Fluency
IS	3003	Principles of Information Systems for Management
MAT	1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement) (Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)
MGT	3003	Business Communication and Professional Development
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MGT	4893	Management Strategy (taken in semester of graduation)
MKT	3013	Principles of Marketing
MS	1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)
MS	3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)
MS	3053	Management Science and Operations Technology

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Degree Requirements

A. 15 upper-division semester credit hours in the major:

MGT	3613	Managing Human Resources
MGT	4613	Compensating Employees
MGT	4623	Staffing Organizations
MGT	4663	Training and Developing Employees
MGT	4803	Managing Human Resources for Competitive Advantage

B. 9 additional semester credit hours of human resource electives chosen from the following:

MGT	3023	Understanding People and Organizations
MGT	3123	Organizational Communication
MGT	3253	Interpersonal Communication
MGT	3803	Strategic Management of Nonprofit Organizations
MGT	4213	Designing Organizations
MGT	4633	Labor Relations
MGT	4643	Human Resources Law
MGT	4813	Current Topics in Human Resource Management
MGT	4923	Leading Organizations and Making Decisions
MGT	4933	Internship in Management (HR internship)

To substitute another course for one of these human resource electives, a student must submit a petition to the College of Business Undergraduate Advising Center and receive approval from a Human Resource Management full-time faculty member before registering for the course.

C. 3 semester credit hours of support work from the following:

COM	2113	Public Speaking
ENG	2413	Technical Writing

D. 2 semester credit hours of lower-division or upper-division business or non-business electives

Course Sequence Guide for B.B.A. Degree in Human Resource Management

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with an academic advisor in the College of Business Undergraduate Advising Center for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and

individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
MAT 1033 (core and major)	3
WRC 1013 (core)	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Second Semester	
COM 1053	3
IS 1403	3
WRC 1023 (core)	3
Natural Sciences core - Level I	3
U.S. History & Diversity core	3
Total semester hours	*15*
Third Semester	
ACC 2013	3
ECO 2013* (core and major)	3
MS 1023	3
POL 1013 (core)	3
Literature core	3
Total semester hours	*15*
Fourth Semester	
ACC 2033	3
ECO 2023*	3
MS 3043	3
POL 1133 or POL 1213 (core)	3
Natural Sciences core - Level II	3
Total semester hours	*15*
Fifth Semester	
GBA 2013	3
IS 3003	3
MGT 3003	3
MGT 3013	3
MS 3053	3
Total semester hours	*15*
Sixth Semester	
BLW 3013	3
FIN 3014	4
MGT 3613	3
MKT 3013	3
Business or non-business elective	2
Total semester hours	*15*

Courses	Credit Hours
Seventh Semester	
COM 2113 or ENG 2413	3
MGT 4613	3
MGT 4623	3
HR elective (upper division)	3
HR elective (upper division)	3
Total semester hours	*15*
Eighth Semester	
MGT 4663	3
MGT 4803	3
MGT 4893	3
HR elective (upper division)	3
World Society & Issues core	3
Total semester hours	*15*

* ECO 2013 and ECO 2023 may be taken in either sequence.

Minor in International Management

The Minor in International Management is available only to students pursuing a B.B.A. degree. All students pursuing the minor must take the following 18 semester credit hours:

ECO	2013	Introductory Macroeconomics (may be used to satisfy the Core Curriculum requirement)
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MGT	4073	International Management
MGT	4083	Comparative International Management Practices
MKT	3013	Principles of Marketing
MKT	4073	International Marketing

To declare a Minor in International Management, obtain advice, and seek approval of substitutions for course requirements, students must consult the College of Business Undergraduate Advising Center.

Minor in Management

The Minor in Management is available only to students pursuing a B.B.A. degree. All students pursuing the minor must complete 18 semester credit hours.

A. 9 semester credit hours of required courses:

MGT	3003	Business Communication and Professional Development
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MGT	3023	Understanding People and Organizations

B. 9 semester credit hours of upper-division Management courses that are not part of the Common Body of Knowledge (CBK)

To declare a Minor in Management, obtain advice, and seek approval of substitutions for course requirements, students must consult the College of Business Undergraduate Advising Center.

DEPARTMENT OF MANAGEMENT SCIENCE AND STATISTICS

Mission Statement

The mission of the Department of Management Science and Statistics is to offer both undergraduate and graduate educational programs that are of high quality and meet the changing needs of the global community; to provide a supportive learning environment for students; to foster the success of our students in their professional careers; and to create an academic environment that stresses excellence in teaching, intellectual contributions, and service. The Department contributes to the missions of the College and the University through research and education in the quantitative sciences. Theory and analysis are applied to a variety of interdisciplinary problems to discover new approaches for meeting the challenges of decision making in a global arena of expanding technology and information.

Department Information

The disciplines of Management Science and Statistics are integral to modern decision-making processes. These interdisciplinary fields emphasize the use of quantitative methods and computers for analyzing, understanding, visualizing, and interpreting data. Management Science seeks to provide a rational basis for decision analysis across a broad spectrum of business functions such as production/operations, marketing, finance, human resources, project management, logistics, and supply chain management. Statistical methods provide analytical tools for research in high-technology and biomedical industries, insurance, and government agencies. Both disciplines offer the opportunity to pursue advanced graduate studies. The Department of Management Science and Statistics offers a Bachelor of Business Administration degree in Management Science, a Bachelor of Business Administration degree in Actuarial Science, and a Bachelor of Science degree in Statistics. The department also offers minors in Actuarial Science, Adaptive Decision Models for Business, Applied Statistics, and Management Science, which are open to all majors in the University.

Department Honors

The Department of Management Science and Statistics offers the opportunity for certain of its outstanding students to achieve the designation of Honors in Major and provides the opportunity for advanced study under close faculty supervision.

Selection for Honors designation is based on the student's academic performance and recommendation by the Department Undergraduate Program Committee (UPC) in consultation with the faculty of the student's major discipline. To be eligible for the designation, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. To enroll in honors thesis courses and to graduate with the honors designation, these minimum grade point averages must be maintained. Students applying for Honors in Major are expected to enroll in the appropriate honors thesis course during their final two semesters. The completed honors thesis must be approved by the supervising faculty sponsor from the student's discipline and the UPC. Students interested in this program should contact the Department of Management Science and Statistics office for additional information. Department honors can be attained independent of, or in addition to, University Honors.

Bachelor of Business Administration Degree in Management Science

Solving problems and making decisions are integral parts of every organization's daily operations. The discipline of Management Science focuses on the development and application of scientific and mathematical modeling to aid organizations in making these decisions. Students will have the opportunity to develop and apply analytical models and to acquire essential computer skills necessary in the increasingly technical business environments. Many organizations hire management science majors for managerial positions because of their computing skills and problem-solving abilities. These skills are essential in business environments that are seeking increased efficiency and productivity. The focus of this degree is on applications and appropriate software with a view toward how a manager can effectively apply quantitative models to improve the decision-making process.

The diverse courses offered provide students with an opportunity to specialize in professional fields such as operations and logistics. Thus, students have the option of emphasizing operations and logistics or using their breadth of marketable skills and abilities to solve problems in a variety of organizations and functional areas. The degree is designed to prepare students for careers in manufacturing, materials management, service operations, procurement, third party logistics, transportation processes, and management consulting. Since management science majors study a wide variety of topics dealing with daily activities and problems faced by managers in today's ever-changing world, many career tracks are available to them. The minimum number of semester credit hours required for the Bachelor of Business Administration in Management Science is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Management Science must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Economics.

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC	2013	Principles of Accounting I
ACC	2033	Principles of Accounting II
BLW	3013	Business Law
COM	1053	Business and Professional Speech
ECO	2013	Introductory Macroeconomics (satisfies Economics Core Curriculum requirement)
ECO	2023	Introductory Microeconomics
FIN	3014	Principles of Business Finance
GBA	2013	Social and Ethical Issues in Business
IS	1403	Business Information Systems Fluency
IS	3003	Principles of Information Systems for Management
MAT	1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement) (Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)
MGT	3003	Business Communication and Professional Development
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MGT	4893	Management Strategy (taken in semester of graduation)
MKT	3013	Principles of Marketing
MS	1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)
MS	3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)
MS	3053	Management Science and Operations Technology

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Degree Requirements

A. 9 semester credit hours of required Management Science courses:

MS	3403	Logistics Management
MS	4333	Project Management
MS	4343	Production/Operations Management

B. 15 semester credit hours of business upper-division electives chosen from the following:

ECO	3123	Introduction to Econometrics and Business Forecasting
FIN	4523	Introduction to Risk Management
FIN	4873	Computer Modeling of Financial Applications
IS	4153	Web Site Development
IS	4203	Business Process Re-engineering
MKT	3083	Marketing Research
MS	3063	Decision Support Systems
MS	3313	Business Applications of Statistics
MS	3413	Purchasing and Inventory Management
MS	4313	Six Sigma and Lean Operations
MS	4323	Simulation Applications in Business
MS	4353	Service Operations Management
MS	4363	Quality Management and Control
MS	4383	Applied Forecasting in Operations
MS	4543	Supply Chain Management
MS	4913	Independent Study in Management Science
MS	4933	Internship in Management Science
MS	4953	Special Studies in Management Science
STA	3003	Applied Statistics
STA	3313	Experiments and Sampling
STA	4133	Introduction to Programming and Data Management in SAS
STA	4753	Time-Series Analysis
STA	4803	Statistical Quality Control

To substitute another course for one of the above electives, a student should submit a petition to the College of Business Undergraduate Advising Center and receive approval from any Management Science full-time faculty member before registering for the course.

C. 5 semester credit hours of lower-division or upper-division business or non-business electives

For options in designing and selecting career tracks, contact a Management Science full-time faculty member.

Course Sequence Guide for B.B.A. Degree in Management Science

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with an academic advisor in the College of Business Undergraduate Advising Center for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
IS 1403	3
MAT 1033 (core and major)	3
WRC 1013 (core)	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Second Semester	
COM 1053	3
MS 1023	3
WRC 1023 (core)	3
Natural Sciences core - Level I	3
U.S. History & Diversity core	3
Total semester hours	*15*

Courses	Credit Hours
Third Semester	
ACC 2013	3
ECO 2013* (core and major)	3
MS 3043	3
POL 1013 (core)	3
Literature core	3
Total semester hours	*15*
Fourth Semester	
ACC 2033	3
ECO 2023*	3
MS 3053	3
POL 1133 or POL 1213 (core)	3
Natural Sciences core - Level II	3
Total semester hours	*15*
Fifth Semester	
GBA 2013	3
MGT 3003	3
MGT 3013	3
MS 4343	3
Major elective (upper division)	3
Total semester hours	*15*
Sixth Semester	
BLW 3013	3
FIN 3014	4
IS 3003	3
MS 3403	3
MS 4333	3
Total semester hours	*16*
Seventh Semester	
MKT 3013	3
Business or non-business elective	3
Major elective (upper division)	3
Major elective (upper division)	3
World Society & Issues core	3
Total semester hours	*15*
Eighth Semester	
MGT 4893	3
Business or non-business elective	2
Major elective (upper division)	3
Major elective (upper division)	3
Social & Behavioral Science core	3
Total semester hours	*14*

* ECO 2013 and ECO 2023 may be taken in either sequence.

Bachelor of Business Administration Degree in Actuarial Science

Actuarial Science is a discipline that uses mathematical and statistical models to solve problems in insurance and finance. Students will take courses in mathematics, statistics, economics, and finance as part of the degree program. There is an increasing need for trained actuaries in the insurance industry. The Bachelor of Business Administration (B.B.A.) in Actuarial Science provides students the opportunity to acquire the quantitative and business skills to prepare them for a career as an actuary. The minimum number of semester credit hours for the B.B.A. degree in Actuarial Science is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Actuarial Science must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for the degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1214 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Economics.

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC	2013	Principles of Accounting I
ACC	2033	Principles of Accounting II
BLW	3013	Business Law
COM	1053	Business and Professional Speech
ECO	2013	Introductory Macroeconomics (satisfies Economics Core Curriculum requirement)
ECO	2023	Introductory Microeconomics
FIN	3014	Principles of Business Finance
GBA	2013	Social and Ethical Issues in Business
IS	1403	Business Information Systems Fluency
IS	3003	Principles of Information Systems for Management
MAT	1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement) (Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)
MGT	3003	Business Communication and Professional Development

MGT	3013	Introduction to Organization Theory, Behavior, and Management
MGT	4893	Management Strategy (taken in semester of graduation)
MKT	3013	Principles of Marketing
MS	1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)
MS	3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)
MS	3053	Management Science and Operations Technology

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Degree Requirements

A. 20 semester credit hours of required Mathematics and Statistics courses:

MAT	1224	Calculus II
MAT	2214	Calculus III
STA	3513	Probability and Statistics
STA	3523	Mathematical Statistics
STA	4713	Applied Regression Analysis
STA	4753	Time-Series Analysis

B. 6 semester credit hours from the following courses:

FIN	4523	Introduction to Risk Management
FIN	4813	Property-Liability Insurance Finance
FIN	4823	Life and Health Insurance Finance
STA	3023	Statistical Mathematics
STA	4643	Introduction to Stochastic Processes

C. 2 semester credit hours

STA	4961	Actuarial Science Examination Preparation (to be taken two semesters)

Course Sequence Guide for B.B.A. Degree in Actuarial Science

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with an academic advisor in the College of Business Undergraduate Advising Center for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
IS 1403	3
MAT 1214 (core and major)	4
WRC 1013 (core)	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*16*
Second Semester	
COM 1053	3
MAT 1224	4
WRC 1023 (core)	3
Natural Sciences core - Level I	3
U.S. History & Diversity core	3
Total semester hours	*16*
Third Semester	
ACC 2013	3
ECO 2013* (core and major)	3
MAT 2214	4
STA 1053	3
Literature core	3
Total semester hours	*16*
Fourth Semester	
ACC 2033	3
ECO 2023*	3
STA 3003	3
Course option in major	3
Natural Sciences core - Level II	3
Total semester hours	*15*
Fifth Semester	
FIN 3014	4
MGT 3003	3
MS 3053	3
POL 1133 or POL 1213 (core)	3
STA 3513	3
Total semester hours	*16*
Sixth Semester	
IS 3003	3
MGT 3013	3
MKT 3013	3
STA 3523	3
STA 4713	3
Total semester hours	*15*

Courses	Credit Hours
Seventh Semester	
GBA 2013	3
POL 1013 (core)	3
STA 4753	3
STA 4961	1
Course option in major	3
Total semester hours	*13*
Eighth Semester	
BLW 3013	3
MGT 4893	3
STA 4961	1
Social & Behavioral Science core	3
World Society & Issues core	3
Total semester hours	*13*

* ECO 2013 and ECO 2023 may be taken in either sequence.

Bachelor of Science Degree in Statistics

Statistics is a science that deals with principles and procedures for obtaining and processing information in order to make decisions in the face of uncertainty. In particular, it deals with collection, organization, analysis, and interpretation of numerical information to answer questions in almost every aspect of modern-day life. Statistical methods are used to address complex questions common in business, government, and science. Employers such as research divisions in pharmaceutical companies, clinical research units at medical centers, quality control or reliability departments in manufacturing companies, corporate planning and financial analysis units, and government agencies require persons with advanced quantitative skills.

The Bachelor of Science degree in Statistics provides students with access to such skills preparing them for careers as statistical analysts or for further graduate academic training. The minimum number of semester credit hours required for the Bachelor of Science degree in Statistics is 120, at least 39 of which must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Statistics must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1214 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Economics.

Degree Requirements

A. 15 semester credit hours of required courses in the computational and mathematical sciences:

CS	1173	Data Analysis and Visualization using MATLAB
MAT	1214	Calculus I
MAT	1224	Calculus II
MAT	2214	Calculus III

B. 42 semester credit hours in the major:

1. 30 semester credit hours of required statistics courses:

STA	1053	Basic Statistics
STA	1993	Biostatistics
		or
STA	3003	Applied Statistics
STA	3023	Statistical Mathematics
STA	3313	Experiments and Sampling
STA	3513	Probability and Statistics
STA	3523	Mathematical Statistics
STA	4133	Introduction to Programming and Data Management in SAS
STA	4233	Statistical Applications Using SAS Software
STA	4713	Applied Regression Analysis
STA	4723	Introduction to the Design of Experiments

2. 12 semester credit hours selected from the following:

MS	4363	Quality Management and Control
STA	3013	Multivariate Analysis for the Life and Social Sciences
STA	3813	Discrete Data Analysis
STA	4143	Data Mining
STA	4643	Introduction to Stochastic Processes
STA	4753	Time-Series Analysis
STA	4903	Applied Survival Analysis

C. 18 semester credit hours of electives in disciplines where statistics is actively applied and practiced. Nine semester credit hours must be upper division. The department has given pre-approval to the following plans of study for specializations in actuarial science, biology, business, education, mathematics, business, psychology, and social sciences. ***Other specialization plans and the relevant courses may be submitted for approval to the designated Statistics faculty member.***

1. Specialization in Actuarial Science

ACC	2013	Principles of Accounting I
ECO	2013	Introductory Macroeconomics
ECO	2023	Introductory Microeconomics
FIN	3014	Principles of Business Finance
FIN	3023	Intermediate Corporate Finance
		or
FIN	4873	Computer Modeling of Financial Applications
STA	4961	Actuarial Science Examination Preparation (to be taken two semesters)

2. Specialization in Biology

BIO	2313	Genetics
BIO	3283	Principles of Ecology
BIO	3323	Evolution
BIO	3333	Plants and Society
BIO	3433	Neurobiology
BIO	4033	Conservation Biology

3. Specialization in Business

ECO	3123	Introduction to Econometrics and Business Forecasting
MKT	3083	Marketing Research
MS	3063	Decision Support Systems
MS	4313	Six Sigma and Lean Operations
MS	4343	Production/Operations Management
MS	4363	Quality Management and Control

4. Specialization in Education

BBL	3403	Cultural and Linguistic Diversity in a Pluralistic Society
EDP	3203	Learning and Development in the Secondary School Adolescent
EDU	2103	Social Foundations for Education in a Diverse U.S. Society
ESL	3023	Second Language Teaching and Learning in EC–6
IDS	2013	Introduction to Learning and Teaching in a Culturally Diverse Society
SPE	3603	Introduction to Special Education

5. Specialization in Mathematics

MAT	2233	Linear Algebra
MAT	3213	Foundations of Analysis
MAT	3223	Complex Variables
MAT	3613	Differential Equations I
MAT	3633	Numerical Analysis
MAT	4213	Real Analysis I
		or
MAT	4313	Applied Combinatorics

6. Specialization in Psychology

PSY	1013	Introduction to Psychology
PSY	2503	Developmental Psychology
PSY	3013	Psychological Measurement
PSY	3063	Psychological Testing
PSY	3403	Experimental Psychology
PSY	3413	Experimental Psychology Laboratory

7. Specialization in Social Sciences

SOC	1013	Introduction to Sociology
SOC	3033	Population Dynamics
SOC	3223	Population Dynamics and Demographic Techniques
SOC	3313	Introduction to Social Research
SOC	3323	Quantitative Research Methods
SOC	3373	Qualitative Research Methods

D. 6 semester credit hours of lower-division or upper-division business or non-business electives.

Course Sequence Guide for B.S. Degree in Statistics

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with an academic advisor in the College of Business Undergraduate Advising Center for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
CS 1173	3
STA 1053*	3
WRC 1013 (core)	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Second Semester	
MAT 1214* (core and major)	4
STA 1993 or STA 3003**	3
WRC 1023 (core)	3
Natural Sciences core - Level I	3
U.S. History & Diversity core	3
Total semester hours	*16*
Third Semester	
ECO 2013 (core)	3
MAT 1224	4
POL 1013 (core)	3
STA 3023	3
STA 3313	3
Total semester hours	*16*
Fourth Semester	
POL 1133 or POL 1213 (core)	3
MAT 2214	4
STA 3513	3
Natural Sciences core - Level II	3
Total semester hours	*13*

Courses	Credit Hours
Fifth Semester	
STA 3523	3
STA 4133	3
Course option in specialization track	3
Course option in specialization track	3
Literature core	3
Total semester hours	*15*
Sixth Semester	
STA 4233	3
STA 4713	3
Business or non-business elective	3
Course option in specialization track	3
World Society & Issues core	3
Total semester hours	*15*
Seventh Semester	
STA 4723	3
Course option in major	3
Course option in specialization track	3
Course option in specialization track	3
Course option in specialization track	3
Total semester hours	*15*
Eighth Semester	
Business or non-business elective	3
Course option in major	3
Course option in major	3
Course option in major	3
Social & Behavioral Science core	3
Total semester hours	*15*

* Students must take Math Placement Test to register for STA 1053 and MAT 1214. Beginning math course will be determined by Math Placement Test scores.

** STA 3003 is prerequisite for other required courses.

Minor in Actuarial Science

The Minor in Actuarial Science is open to all majors in the University. All students pursuing the minor must complete 18 semester credit hours.

A. 6 semester credit hours of required business courses:

ECO 2013 Introductory Macroeconomics
ECO 2023 Introductory Microeconomics

B. 12 semester credit hours selected from the following courses:

STA 3513 Probability and Statistics
STA 3523 Mathematical Statistics
STA 4643 Introduction to Stochastic Processes
STA 4713 Applied Regression Analysis
STA 4753 Time-Series Analysis

To declare a Minor in Actuarial Science, obtain advice, and seek approval of substitutions for course requirements, students must consult the College of Business Undergraduate Advising Center.

Minor in Adaptive Decision Models for Business

The Minor in Adaptive Decision Models for Business is open to all majors in the University. All students pursuing the minor must complete 18 semester credit hours.

A. 3 semester credit hours selected from the following courses:

CS 3333 Mathematical Foundations of Computer Science
ME 3113 Measurements and Instrumentation
MS 3053 Management Science and Operations Technology (or an equivalent course)

B. 6 semester credit hours selected from the following courses:

ACC 2013 Principles of Accounting I

FIN 3003 Survey of Finance
or
FIN 3014 Principles of Business Finance

C. 6 semester credit hours selected from the following courses:

Analytical Models
MS 3063 Decision Support Systems
MS 3313 Business Applications of Statistics
MS 4323 Simulation Applications in Business
MS 4333 Project Management
MS 4383 Applied Forecasting in Operations

Operational Models
MS 3403 Logistics Management
MS 3413 Purchasing and Inventory Management
MS 4313 Six Sigma and Lean Operations
MS 4343 Production/Operations Management
MS 4353 Service Operations Management
MS 4363 Quality Management and Control
MS 4543 Supply Chain Management

D. 3 semester credit hours of upper-division electives in disciplines where quantitative methods are actively applied and practiced. These courses should be approved by the designated management science faculty member.

To declare a minor in Adaptive Decision Models for Business and seek approval of substitutions for course requirements, students must consult the College of Business Undergraduate Advising Center or the designated management science faculty member.

Minor in Applied Statistics

The Minor in Applied Statistics is open to all majors in the University. All students pursuing the Minor in Applied Statistics must complete 18 semester credit hours.

A. 6 semester credit hours of required courses from one of the following four sets of sequences:

1. STA 1403 Probability and Statistics for the Biosciences

   STA 1993 Biostatistics
   or
   STA 3003 Applied Statistics

2. PSY 2073 Statistics for Psychology

   PSY 3013 Psychological Measurement
   or
   POL 2703 Scope and Methods in Political Science

3. MS 1023 Business Statistics with Computer Applications I
   MS 3043 Business Statistics with Computer Applications II

4. STA 3003 Applied Statistics

   and one of the following:

   CS 3333 Mathematical Foundations of Computer Science
   STA 2303 Applied Probability and Statistics for Engineers
   STA 3513 Probability and Statistics
   STA 3533 Probability and Random Processes

B. 12 semester credit hours selected from the following list of courses:

STA 3013 Multivariate Analysis for the Life and Social Sciences
STA 3313 Experiments and Sampling
STA 3433 Applied Nonparametric Statistics
STA 3813 Discrete Data Analysis
STA 4133 Introduction to Programming and Data Management in SAS
STA 4143 Data Mining
STA 4233 Statistical Applications Using SAS Software
STA 4713 Applied Regression Analysis
STA 4723 Introduction to the Design of Experiments
STA 4753 Time-Series Analysis

STA 4803 Statistical Quality Control
or
MS 4363 Quality Management and Control

STA 4903 Applied Survival Analysis
STA 4953 Special Studies in Statistics

To declare a Minor in Applied Statistics, obtain advice, and seek approval of substitutions for course requirements, students must consult the College of Business Undergraduate Advising Center or the designated Statistics faculty member.

Minor in Management Science

The Minor in Management Science is open to all majors in the University. All students pursuing the minor must complete 18 semester credit hours.

A. 6 semester credit hours of the following courses:

MS 3053 Management Science and Operations Technology
MS 4343 Production/Operations Management

B. 12 semester credit hours of electives chosen from the following:

ECO 3123 Introduction to Econometrics and Business Forecasting
FIN 4523 Introduction to Risk Management
FIN 4873 Computer Modeling of Financial Applications
IS 4153 Web Site Development
IS 4203 Business Process Re-engineering
MKT 3083 Marketing Research
MS 3063 Decision Support Systems
MS 3313 Business Applications of Statistics
MS 3403 Logistics Management
MS 3413 Purchasing and Inventory Management
MS 4313 Six Sigma and Lean Operations
MS 4323 Simulation Applications in Business
MS 4333 Project Management
MS 4353 Service Operations Management
MS 4363 Quality Management and Control
MS 4383 Applied Forecasting in Operations
MS 4543 Supply Chain Management
MS 4913 Independent Study in Management Science
MS 4933 Internship in Management Science
MS 4953 Special Studies in Management Science
STA 3003 Applied Statistics
STA 3313 Experiments and Sampling
STA 4133 Introduction to Programming and Data Management in SAS
STA 4753 Time-Series Analysis
STA 4803 Statistical Quality Control

To declare a Minor in Management Science, obtain advice, and seek approval of substitutions for course requirements, students must consult the College of Business Undergraduate Advising Center.

DEPARTMENT OF MARKETING

The Department of Marketing offers a Bachelor of Business Administration (B.B.A.) degree in Marketing and a Minor in Marketing. In addition, the Department offers a B.B.A. degree in Sport, Event and Tourism Management.

The marketing degree provides students with the theory and methods used by businesses to develop strategies for designing, pricing, distributing, and promoting the firm's offerings. Courses present practical treatment of such topics as marketing strategy, customer demand analysis, market segmentation, promotion management, consumer behavior and decision making, and international marketing. Graduates can choose from a wide range of careers including marketing management, advertising, personal selling, retailing, international marketing, and marketing research.

The Minor in Marketing is available only to students pursuing a B.B.A. degree.

The sport, event, and tourism management degree provides the opportunity for a comprehensive business education that can allow students to enter into careers in sport management and marketing, event management, travel and tourism, and destination marketing.

Department Honors

The Department of Marketing offers the opportunity for certain of its outstanding students to achieve the designation of Honors in Marketing and provides the opportunity for advanced study under close faculty supervision.

Selection for honors designation is based on the student's academic performance and recommendation by the Department Undergraduate Program Committee (UPC) in consultation with the Marketing faculty. To be eligible for the designation, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. To enroll in honors thesis courses and to graduate with the honors designation, these minimum grade point averages must be maintained. Students applying for Honors in Marketing are expected to enroll in the appropriate honors thesis course during their final two semesters. The completed thesis must be approved by a supervising faculty sponsor in Marketing and the UPC. Students interested in this program should contact the UPC through the Department of Marketing office for additional information. Department Honors can be attained independent of, or in addition to, University Honors.

Bachelor of Business Administration Degree in Marketing

The minimum number of semester credit hours required for this degree is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Marketing must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Economics.

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC	2013	Principles of Accounting I
ACC	2033	Principles of Accounting II
BLW	3013	Business Law
COM	1053	Business and Professional Speech
ECO	2013	Introductory Macroeconomics (satisfies Economics Core Curriculum requirement)
ECO	2023	Introductory Microeconomics
FIN	3014	Principles of Business Finance
GBA	2013	Social and Ethical Issues in Business
IS	1403	Business Information Systems Fluency
IS	3003	Principles of Information Systems for Management
MAT	1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement) (Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)
MGT	3003	Business Communication and Professional Development
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MGT	4893	Management Strategy (taken in semester of graduation)
MKT	3013	Principles of Marketing
MS	1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)
MS	3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)
MS	3053	Management Science and Operations Technology

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Degree Requirements

A. 21 required upper-division semester credit hours in the major:

12 hours of required courses:

MKT 3083	Marketing Research
MKT 4073	International Marketing
MKT 4093	Consumer Behavior
MKT 4893	Marketing Capstone

9 additional semester credit hours of marketing electives

B. 3 semester credit hours of support work within the College of Business chosen from the following courses:

ACC	3123	Cost Analysis
ECO	3033	Economics of Managerial Decisions
ECO	3053	Aggregate Economic Analysis
FIN	3033	Principles of Investment
FIN	3313	Money and Banking
IS	4153	Web Site Development
MS	4343	Production/Operations Management
MS	4543	Supply Chain Management

C. 5 semester credit hours of lower-division or upper-division business or non-business electives

Course Sequence Guide for B.B.A. Degree in Marketing

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with an academic advisor in the College of Business Undergraduate Advising Center for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
MAT 1033 (core and major)	3
WRC 1013 (core)	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Second Semester	
COM 1053	3
IS 1403	3
WRC 1023 (core)	3
Natural Sciences core - Level I	3
U.S. History & Diversity core	3
Total semester hours	*15*
Third Semester	
ACC 2013	3
ECO 2013* (core and major)	3
MS 1023	3
POL 1013 (core)	3
Literature core	3
Total semester hours	*15*
Fourth Semester	
ACC 2033	3
ECO 2023*	3
MS 3043	3
POL 1133 or POL 1213 (core)	3
Natural Sciences core - Level II	3
Total semester hours	*15*
Fifth Semester	
GBA 2013	3
IS 3003	3
MGT 3003	3
MKT 3013	3
MS 3053	3
Total semester hours	*15*
Sixth Semester	
BLW 3013	3
FIN 3014	4
MGT 3013	3
MKT 3083	3
MKT 4093	3
Total semester hours	*16*
Seventh Semester	
MKT 4073	3
Business or non-business elective	3
MKT elective (upper division)	3
MKT elective (upper division)	3
Support work elective	3
Total semester hours	*15*
Eighth Semester	
MGT 4893	3
MKT 4893	3
Business or non-business elective	2
MKT elective (upper division)	3
World Society & Issues core	3
Total semester hours	*14*

* ECO 2013 and ECO 2023 may be taken in either sequence.

Bachelor of Business Administration Degree in Sport, Event and Tourism Management

The minimum number of semester credit hours required for this degree is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements, the Common Body of Knowledge (CBK) requirements, and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Business Administration degree in Sport, Event and Tourism Management must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1033 should be used to satisfy the core requirement in Mathematics. ECO 2013 should be used to satisfy the core requirement in Economics.

Common Body of Knowledge (CBK)

All students seeking a B.B.A. degree in the College of Business must complete the following Common Body of Knowledge (CBK) courses in addition to the Core Curriculum.

ACC	2013	Principles of Accounting I
ACC	2033	Principles of Accounting II
BLW	3013	Business Law
COM	1053	Business and Professional Speech
ECO	2013	Introductory Macroeconomics (satisfies Economics Core Curriculum requirement)
ECO	2023	Introductory Microeconomics
FIN	3014	Principles of Business Finance
GBA	2013	Social and Ethical Issues in Business
IS	1403	Business Information Systems Fluency
IS	3003	Principles of Information Systems for Management
MAT	1033	Algebra with Calculus for Business (satisfies Mathematics Core Curriculum requirement) (Actuarial Science majors must take MAT 1214 in lieu of MAT 1033)
MGT	3003	Business Communication and Professional Development
MGT	3013	Introduction to Organization Theory, Behavior, and Management
MGT	4893	Management Strategy (taken in semester of graduation)
MKT	3013	Principles of Marketing
MS	1023	Business Statistics with Computer Applications I (Actuarial Science majors must take STA 1053 in lieu of MS 1023)
MS	3043	Business Statistics with Computer Applications II (Actuarial Science majors must take STA 3003 in lieu of MS 3043)
MS	3053	Management Science and Operations Technology

In addition to the Core Curriculum requirements and requirements from the College of Business Common Body of Knowledge (CBK), all candidates for the degree must complete the following degree requirements.

Degree Requirements

A. 21 required upper-division semester credit hours in the major (3 semester credit hours of lower-division courses and 18 semester credit hours of upper-division courses):

12 semester credit hours of required courses:

SET	2123	Survey of Tourism
SET	3233	Sport Management
SET	3333	Event Management
SET	4543	Destination Marketing

9 additional semester credit hours of sport, event and tourism courses chosen from the following:

BLW	4153	Tourism Law
MKT	3063	Personal Selling
MKT	4143	Sports Marketing
MS	4333	Project Management
MS	4353	Service Operations Management
SET	3043	Attractions Management
SET	3283	Sport and Event Media Relations
SET	3313	Sport Tourism and Events
SET	3413	Resort and Club Management
SET	3543	Economics of Tourism and Leisure
SET	4233	Sport and Event Facility Management
SET	4811-3	Special Topics in Sport, Event and Tourism Management
SET	4921-3	Independent Study in Sport, Event and Tourism Management
SET	4941-3	Internship in Sport, Event and Tourism Management

B. 3 semester credit hours of support work within the College of Business chosen from the following:

ECO	3193	International Economics
ECO	4303	Economics of Developing Countries
FIN	4613	Introduction to International Finance
MGT	4073	International Management
MGT	4083	Comparative International Management Practices
MKT	4073	International Marketing

C. 5 semester credit hours of lower-division or upper-division business or non-business electives (the following courses are recommended):

KIN	2441	Management and Organization in Kinesiology and Sports
NPO	3003	Fundraising in Nonprofit Agencies
NPO	3013	Introduction to Nonprofit Agencies
SOC	3463	Sociology of Sport and Leisure
SOC	3473	Environmental Sociology

Course Sequence Guide for B.B.A. Degree in Sport, Event and Tourism Management

This course sequence guide is designed to assist students in completing their UTSA undergraduate business degree requirements. This is a term-by-term sample course guide. Students must satisfy other requirements in their catalog and meet with an academic advisor in the College of Business Undergraduate Advising Center for an individualized degree plan. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
MAT 1033 (core and major)	3
WRC 1013 (core)	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Second Semester	
COM 1053	3
IS 1403	3
WRC 1023 (core)	3
Natural Sciences core - Level I	3
U.S. History & Diversity core	3
Total semester hours	*15*
Third Semester	
ACC 2013	3
ECO 2013* (core and major)	3
MS 1023	3
POL 1013 (core)	3
Literature core	3
Total semester hours	*15*
Fourth Semester	
ACC 2033	3
ECO 2023*	3
MS 3043	3
POL 1133 or POL 1213 (core)	3
SET 2123	3
Total semester hours	*15*
Fifth Semester	
GBA 2013	3
MGT 3003	3
MKT 3013	3
MS 3053	3
SET 3233	3
Total semester hours	*15*
Sixth Semester	
IS 3003	3
MGT 3013	3
SET 3333	3
Natural Sciences core - Level II	3
SET elective	3
Total semester hours	*15*
Seventh Semester	
BLW 3013	3
FIN 3014	4
Business or non-business elective	2
SET elective	3
World Society & Issues core	3
Total semester hours	*15*
Eighth Semester	
MGT 4893	3
SET 4543	3
Business or non-business elective	3
SET elective	3
Support work COB-INL elective	3
Total semester hours	*15*

* ECO 2013 and ECO 2023 may be taken in either sequence.

Minor in Marketing

The Minor in Marketing is available only to students pursuing a B.B.A. degree. All students pursuing the Minor in Marketing must complete 18 semester credit hours.

A. 3 semester credit hours of required coursework:

MKT 3013 Principles of Marketing

B. 15 semester credit hours selected from the following courses:

MKT 3043 Advertising
MKT 3063 Personal Selling
MKT 3083 Marketing Research
MKT 3113 Retailing
MKT 4063 Multicultural Marketing
MKT 4073 International Marketing
MKT 4093 Consumer Behavior
MKT 4143 Sports Marketing
MKT 4233 Integrated Marketing Communications
MKT 4953 Special Studies in Marketing

To declare a Minor in Marketing, obtain advice, and seek approval of substitutions for course requirements, students must consult the College of Business Undergraduate Advising Center.

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5

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5. College of Education and Human Development

Vision Statement

The College of Education and Human Development (COEHD) at The University of Texas at San Antonio will be an international model for developing inclusive, transformative leaders guided by principles of community, equity, respect for diversity, integrity, service, and scholarship.

Mission Statement

The College of Education and Human Development will create a democratic, collaborative learning organization in a way that:

- promotes equity, fairness, and accountability
- recognizes a healthy balance among scholarship, teaching, and service
- develops and applies new knowledge of best practices
- prepares educators/leaders to succeed in diverse contexts
- retains students, faculty, and staff
- builds community within and at large
- fosters the holistic development of all its members
- uses resources effectively and efficiently

so that the College graduates citizens who are engaged in productive contributions to self, society, and the global community.

General Information

The College of Education and Human Development is made up of six departments: Bicultural-Bilingual Studies; Counseling; Educational Leadership and Policy Studies; Educational Psychology; Health and Kinesiology; and Interdisciplinary Learning and Teaching.

Six undergraduate degrees are offered within the College: the Bachelor of Applied Arts and Sciences in Infancy and Childhood Studies, the Bachelor of Arts in Interdisciplinary Studies, the Bachelor of Arts in Mexican American Studies, the Bachelor of Arts in Women's Studies, the Bachelor of Science in Health, and the Bachelor of Science in Kinesiology. Minors are also offered in African American Studies, Athletic Coaching, Bicultural Studies, English as a Second Language, Health, and Women's Studies. For more information related to the College, consult the Web page: http://education.utsa.edu.

Advising and Certification Center

Academic Advising

Academic advising services are provided for students admitted to or currently enrolled at UTSA in the following majors: Health, Kinesiology, Interdisciplinary Studies, Infancy and Childhood Studies, Mexican American Studies, and Women's Studies. Advising services are also provided for students seeking a teaching certificate for those Secondary and All-Level content areas that are available at UTSA. This includes students pursuing Secondary and All-Level certification, students with earned baccalaureate degrees who would like to become certified as teachers, and teachers wishing to add additional certificates to their credentials.

Certification

The University of Texas at San Antonio is approved by the State Board for Educator Certification (SBEC) to offer teacher certificate programs for Texas certification as elementary, middle school, and high school classroom teachers.

Students interested in pursuing elementary and middle school teacher certification will major in Interdisciplinary Studies and follow the appropriate certification program for the desired level of the certificate. Students who would like to become high school teachers will major in the academic area in which certification is desired and simultaneously follow the certification program for this teaching field. Students pursuing All-Level certification will follow specialized All-Level programs in Art, Music or Kinesiology.

Additional information about UTSA certification programs and teacher certification guidelines is available in the Teacher Certification section of this catalog and in the COEHD Advising and Certification Center.

Bachelor of Arts Degree in Women's Studies

The major in Women's Studies provides students with the opportunity to examine the social, historical, political, and cultural experiences of women and men from an interdisciplinary perspective. Emphasis on cross-disciplinary research methods enables students to pursue a theoretically-informed understanding of women and issues of gender and sexuality in diverse U.S. and global cultures and across time.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Women's Studies must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum

number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

Degree Requirements

A. 21 semester credit hours:

1. 15 semester credit hours of required courses:

WS	2013	Introduction to Women's Studies
WS	3613	Feminist Research Methodologies
WS	4623	Feminist Theories
WS	4933	Internship in Women's Studies
WS	4973	Seminar in Women's Studies

2. 3 semester credit hours selected from the Globalization and Borderlands group below

3. 3 semester credit hours selected from the Culture and Society group below

B. 24 semester credit hours selected from at least two of the following groups:

Theory and Methods

ENG	4393	Feminist Theory of Literature
POL	3163	Introduction to Feminist Theory
WS	3953	Special Topics in Women Writers
WS	4953	Special Topics in Women's Studies

Globalization and Borderlands

BBL	2023	Latino Cultural Expressions
GRG	3653	Geographic Perspectives on Women
HIS	3133	Themes in the Social History of the United States
WS	4863	Feminism and Globalization

Culture and Society

AMS	3443	Studies in Gender and Sexuality
ANT	3103	Kinship and Social Organization
ANT	3603	Sex, Gender, and Culture
BBL	3023	Mexican American Culture
BBL	3043	Social Psychological Considerations in Mexican American Communities
BIO	2003	Biology of Human Reproduction
CRJ	4463	Gender and Crime
CRJ	4853	Sex Crimes and the Law
ENG	3133	Women and Literature
HIS	3043	History of Women in the United States: Pre-Columbus to 1890
HIS	3053	History of Women in the United States: Since 1890
HIS	3963	Women and Gender in India
HTH	3023	Survey of Human Sexuality
IDS	2113	Society and Social Issues
LNG	3843	Gender Issues in Language
MAS	2013	Introduction to Chicano(a) Studies
POL	3183	Women in Politics
PSY	3303	Psychological Perspectives on Gender
PSY	4193	Relationships
SOC	3163	Families in Society
SOC	3263	Latinas in U.S. Society
SOC	3283	Poverty
SOC	3293	Sociology of Gender
SOC	3413	Sociology of the Mexican American Community
SOC	3513	Children and Society
WS	4913	Independent Study
WS	4993	Honors Thesis

C. 33 semester credit hours of electives, 6 hours of which must be at the upper-division level

B.A. in Women's Studies – Recommended Four-Year Academic Plan

Courses	Credit Hours
YEAR 1	
Fall	
HIS 1043, 1053, or 2053 (core)	3
POL 1013 (core)	3
WRC 1013 (core)	3
Free elective	3
Mathematics core	3
Total semester hours	*15*
Spring	
HIS 1043, 1053, or 2053 (core)	3
POL 1133 or 1213 (core)	3
WRC 1023 (core)	3
Free elective	3
Natural Sciences Level I core	3
Total semester hours	*15*
YEAR 2	
Fall	
ECO 2003, 2013, or 2023 (core)	3
WS 2013	3
Free elective	3
Literature core	3
Natural Sciences Level II core	3
Total semester hours	*15*
Spring	
Culture and Society group	3
Free elective	3
Globalization and Borderlands group	3
Social & Behavioral Science core	3
World Society & Issues core	3
Total semester hours	*15*
YEAR 3	
Fall	
WS 3613	3
Free elective	3
Subject Group elective	3
Subject Group elective	3
Visual & Performing Arts core	3
Total semester hours	*15*

Courses	Credit Hours
Spring	
WS 4623	3
Free elective	3
Subject Group elective	3
Subject Group elective	3
Upper-division free elective	3
Total semester hours	*15*
YEAR 4	
Fall	
WS 4973	3
Free elective	3
Free elective	3
Subject Group elective	3
Subject Group elective	3
Total semester hours	*15*
Spring	
WS 4933	3
Free elective	3
Subject Group elective	3
Subject Group elective	3
Upper-division free elective	3
Total semester hours	*15*

Minor in Women's Studies

All students pursuing a Minor in Women's Studies (WS) are required to complete 18 semester credit hours.

A. 6 semester credit hours of required courses:

WS 2013 Introduction to Women's Studies
WS 4623 Feminist Theories

B. 12 additional semester credit hours, in at least two disciplines other than the student's major, selected from the following:

AMS 3443 Studies in Gender and Sexuality
ANT 3103 Kinship and Social Organization
ANT 3603 Sex, Gender, and Culture
BBL 2023 Latino Cultural Expressions
BBL 3023 Mexican American Culture
BBL 3043 Social Psychological Considerations in Mexican American Communities
BIO 2003 Biology of Human Reproduction
CLA 3123 Cultural Issues in Classical Antiquity
CRJ 4403 Race, Ethnicity, and Criminal Justice
CRJ 4463 Gender and Crime
CRJ 4853 Sex Crimes and the Law
ENG 3133 Women and Literature
ENG 4393 Feminist Theory of Literature
HIS 3043 History of Women in the United States: Pre-Columbus to 1890
HIS 3053 History of Women in the United States: Since 1890
HIS 3133 Themes in the Social History of the United States
HIS 3963 Women and Gender in India
HTH 4523 Understanding Human Sexuality
IDS 2113 Society and Social Issues
LNG 3843 Gender Issues in Language
MAS 2013 Introduction to Chicano(a) Studies
POL 3163 Introduction to Feminist Theory
POL 3183 Women in Politics
PSY 3303 Psychological Perspectives on Gender
PSY 4193 Relationships
SOC 3163 Families in Society
SOC 3283 Poverty
SOC 3293 Sociology of Gender
SOC 3413 Sociology of the Mexican American Community
WS 3613 Feminist Research Methodologies
WS 3953 Special Topics in Women Writers
WS 4863 Feminism and Globalization
WS 4913 Independent Study
WS 4933 Internship in Women's Studies
WS 4953 Special Topics in Women's Studies

Note: Please consult the Women's Studies Institute for a complete list of courses that fulfill the WS minor.

To declare a Minor in Women's Studies, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult the College of Education and Human Development Advising and Certification Center.

Minor in African American Studies

The Minor in African American Studies provides an interdisciplinary approach to the political, cultural, historical, and social experiences of African Americans in the United States. Research methods drawn from several disciplines enable students to enhance their understanding of African Americans' unique social circumstances and heritage, and acquire a deeper comprehension of the politics, culture, and history of the nation as a whole.

All students pursuing a Minor in African American Studies must complete 18 semester credit hours, at least 12 hours of which must be at the upper-division level.

A. 6 semester credit hours selected from the following required courses:

AAS 2013 Introduction to African American Studies
or
AMS 2103 Introduction to African American Studies

AAS 4013 Topics in African American Studies

B. 3 semester credit hours selected from the following:

AAS 3013 African American Modes of Expression
AMS 3343 Studies in Race and Ethnicity
ENG 3613 African American Literature
POL 1213 Topics in Texas and American Politics: Civil Rights
POL 3073 African American Politics
POL 3083 Race and Ethnic Politics in the United States
SOC 3043 Race and Ethnic Relations

C. 9 semester credit hours selected from the following categories (i.e., 3 semester credit hours from categories 1, 2, and 3 below):

1. 3 semester credit hours of politics, economy, or geography:

GRG	1023	World Regional Geography (when subtitled "African American and African Focus" in class schedule)
GRG	3213	Cultural Geography
GRG	3513	Urban Geography
POL	1213	Topics in Texas and American Politics: Civil Rights
POL	3073	African American Politics
POL	3083	Race and Ethnic Politics in the United States
POL	3203	African American Political Thought
POL	3303	Race, Ethnicity and Public Policy
POL	3573	Politics of the Contemporary City

Other course substitutions require pre-approval of the advisor and program director.

2. 3 semester credit hours of history, law, or society:

AMS	3343	Studies in Race and Ethnicity
EDU	2103	Social Foundations for Education in a Diverse U.S. Society
HIS	3133	Themes in the Social History of the United States
HIS	3563	African American History to the Civil War
HIS	3573	African American History since the Civil War
HIS	3603	Occupation, Revolution and Nation in Africa
HIS	3613	Migration, Society and Culture in Africa
HIS	3623	History of the Civil Rights Movement
LGS	3113	Blacks, Chicanos, and the Law
POL	3023	Civil Liberties in American Law and Practice (when subtitled "Focus on the Black Experience" in class schedule)
SOC	3043	Race and Ethnic Relations
SOC	3383	Sociology of the African American Community

Other course substitutions require pre-approval of the advisor and program director.

3. 3 semester credit hours of expressive culture (literacy, cultural, and artistic practices):

AAS	3013	African American Modes of Expression
AMS	3343	Studies in Race and Ethnicity
BBL	2033	Cultures of the Southwest
BBL	3403	Cultural and Linguistic Diversity in a Pluralistic Society
ENG	2383	Multiethnic Literatures of the United States
ENG	3613	African American Literature
ENG	4713	Topics in African American Literature
MUS	2663	History and Styles of Jazz

Other course substitutions require pre-approval of the advisor and program director.

Students may take the following courses under section C with approval of program director:

AAS	4913	Independent Study
AAS	4933	Internship in African American Studies

To declare a Minor in African American Studies, obtain advice, or seek approval of substitutions for course requirements, students should consult the College of Education and Human Development Advising and Certification Center.

DEPARTMENT OF BICULTURAL-BILINGUAL STUDIES

The Department of Bicultural-Bilingual Studies offers a Bachelor of Arts (B.A.) degree in Mexican American Studies as well as Minors in Bicultural Studies and English as a Second Language. The B.A. in Mexican American Studies prepares students to enter graduate school or pursue a career as an educator, researcher, community leader, or community advocate. The Department also offers courses that may be used to fulfill the Core Curriculum requirements or that may be taken as support courses for programs within the University or as electives. Courses in bicultural-bilingual studies offer students the opportunity to prepare for bilingual and/or second language teaching and give insights into bilingual and multicultural functions in society. Courses in teaching English as a Second Language (ESL) offer students the opportunity to learn appropriate methods and strategies for teaching at the elementary, secondary, and adult levels. Courses are designed for students who plan to teach second languages, but are also designed for those who intend to teach in other areas or to enter fields that rely heavily on an understanding of language learning and bilingualism. In addition, the Department offers advanced courses in English for international students that are appropriate for both graduate and undergraduate students.

The Department of Bicultural-Bilingual Studies offers coursework required for teacher certification in the area of bilingual education and ESL. Students seeking certification in this area should complete requirements for the Early Childhood–Grade 6 Bilingual Generalist Certificate, the Grades 4–8 Bilingual Generalist Certificate, the Early Childhood–Grade 6 ESL Generalist Certificate, or the Grades 4–8 ESL Certificate.

Department Honors

The Department of Bicultural-Bilingual Studies awards Department Honors to certain outstanding students and provides the opportunity for advanced study under close faculty supervision.

Selection for honors designation is based on the student's academic performance and recommendation by the faculty of the student's major discipline. To be eligible for the program, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. The minimum grade point averages must be maintained for students to receive the approval of the Department Honors Committee and the discipline faculty. Students applying for Department Honors are expected to enroll in the appropriate honors thesis course during their final two semesters. The completed thesis must be approved by the supervising faculty sponsor and another departmental faculty member. Students interested in this program should contact their professors for additional information.

Bachelor of Arts Degree in Mexican American Studies

The Bachelor of Arts in Mexican American Studies is an interdisciplinary program integrating Mexican American studies with a specific liberal arts discipline. Majors are required to complete 39 semester credit hours from a prescribed program of study that must include 18 semester credit hours from one of eight concentrations: Anthropology; Communities, Families, and Children; History; Literary and Cultural Studies; Nonprofit Management; Political Science; Sociology; or Spanish.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the 120 hours must be upper-division. A maximum of 66 community college semester credit hours may be applied to this program.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Mexican American Studies must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

ANT 2033 or ANT 2043 are recommended to satisfy the Level One core requirement in Natural Sciences. ENG 2213, ENG 2383, or ENG 2423 is recommended to satisfy the core requirement in Literature. MAS 2023 is recommended to satisfy the core requirement in Visual and Performing Arts. BBL 2003, BBL 2033, or SOC 2013 is recommended to satisfy the core requirement in Social and Behavioral Science. ANT 2053 or ANT 2063 is recommended to satisfy the core requirement in World Society and Issues.

Degree Requirements

A. 21 semester credit hours of Mexican American studies:

1. 18 required semester credit hours:

BBL	2003	Language, Culture, and Society
		or
BBL	3133	Language Development in Bilinguals
ENG	3513	Mexican American Literature
		or
ENG	4613	Topics in Mexican American Literature
MAS	2013	Introduction to Chicano(a) Studies
MAS	2023	Latino Cultural Expressions
MAS	3033	Mexican Americans in the Southwest
MAS	4083	Research Seminar in Mexican American Studies

2. 3 semester credit hours selected from the following:

BBL	3023	Mexican American Culture (required for anthropology concentration)
MAS	3003	Musical Mestizaje
MAS	3013	Chicana/o Queer Communities, Identities and Theories

MAS 3043 Social Psychological Considerations in Mexican American Communities
MAS 3413 Mexican American Family
MAS 4953 Special Studies in Mexican American Studies (Anthropology concentration students may substitute this course for BBL 3023 when topic is on Mexican Americans and cultural anthropology.)
POL 3093 Mexican American Politics (required for political science concentration)
SOC 3433 Mexican Immigration and U.S. Society (recommended for communities, families, and children concentration)

ENG 3613 African American Literature (may substitute for MAS 4953, POL 3093 or SOC 343 when courses not offered)
or
SPN 3463 Latin American Literature to Modernism (if not taken for the concentration)
or
SPN 3473 Latin American Literature since Modernism (if not taken for the concentration)
or
WS 4623 Feminist Theories (may substitute for MAS 4953, POL 3093, or SOC 3433 when courses not offered)

B. Areas of concentration (18 semester credit hours). One of the following areas of concentration must be selected by the student seeking the Mexican American Studies major. Students are encouraged to select their area of concentration as early in their program as possible.

Note: * Denotes course substitution accepted when taught by a Mexican American Studies affiliate or focus is on Chicano/Latino content

Concentration in Anthropology

1. 9 semester credit hours selected from the following:

ANT 2033 Introduction to Physical Anthropology
ANT 2043 Introduction to Archaeology
ANT 2053 Introduction to Cultural Anthropology
ANT 2063 Language, Thought, and Culture

2. 9 upper-division semester credit hours:

AHC 3423 Arts of Ancient America
ANT 3363 Indians of Mesoamerica

ANT 4123 Archaeology of the American Southwest
or
SOC 3433 Mexican Immigration and U.S. Society*
or
WS 4623 Feminist Theories*

Concentration in Communities, Families, and Children

18 required semester credit hours:

BBL 3053 Foundations of Bilingual Studies
BBL 3143 Children's Literature for Bilingual Learners
ESL 3023 Second Language Teaching and Learning in EC–6
MAS 3413 Mexican American Family
SOC 3503 Sociology of Education

SOC 3513 Children and Society
or
ECE 3143 Child Growth and Development

Concentration in History

1. 6 required semester credit hours:

HIS 2003 Historical Methods
HIS 4973 Seminar in History

2. 6 semester credit hours selected from the following:

HIS 3083 History of the American West
HIS 3153 Development of American Urban Society
HIS 3463 History of Religion in the United States

3. 6 semester credit hours selected from the following:

HIS 2533 Introduction to Latin American Civilization

HIS 3063 The Spanish Borderlands, 1521–1821
or
HIS 3073 The Mexican Borderlands/The American Southwest

HIS 3303 History of Mexico

Concentration in Literary and Cultural Studies

1. 3 semester credit hours in methods. Note: This requirement must be completed before continuing with any other concentration requirements.

ENG 2213 Literary Criticism and Analysis*

2. 3 semester credit hours selected from the following:

ENG 2383 Multiethnic Literatures of the United States*
ENG 2423 Literature of Texas and the Southwest*

3. 3 semester credit hours selected from the following:

ENG 4393 Feminist Theory of Literature
WS 3953 Special Topics in Women Writers

4. 3 semester credit hours selected from the following:

ENG 3513 Mexican American Literature (if not taken for the major requirement)
ENG 3713 Topics in Multiethnic Literatures of the United States*

ENG 4613 Topics in Mexican American Literature (if not taken for the major requirement)

5. 3 semester credit hours selected from the following:

BBL 3023 Mexican American Culture (if not taken for the major requirement)
ENG 3613 African American Literature
HUM 3103 American Film*

6. 3 semester credit hours selected from the following:

ENG 4953 Special Studies in English*
ENG 4973 Seminar for English Majors*

Concentration in Nonprofit Management

12 required semester credit hours:

NPO 3003 Fundraising in Nonprofit Agencies
NPO 3013 Introduction to Nonprofit Agencies
NPO 4933 Internship in Nonprofit Management
PAD 3043 Public and Nonprofit Financial Management

6 semester credit hours selected from the following:

COM 3893 Organizational Communication
PAD 3113 Managing Public and Nonprofit Organizations
PAD 3123 Strategic Planning in the Public and Nonprofit Sectors
PAD 4953 Special Topics in Nonprofit Organizations

Concentration in Political Science

1. 9 required semester credit hours:

POL 2703 Scope and Methods in Political Science
POL 3083 Race and Ethnic Politics in the United States
POL 3093 Mexican American Politics (this course also satisfies a major requirement)

2. 3 semester credit hours selected from the following:

POL 2503 Introduction to Political Theory
POL 2533 Introduction to Political Science
POL 2623 Law and Society
POL 2633 Comparative Politics

3. 9 semester credit hours of upper-division political science courses selected from three of the categories below:

American Politics

POL 3073 African American Politics
POL 3183 Women in Politics
POL 3303 Race, Ethnicity and Public Policy
POL 3413 The Politics of Urban Development
POL 3753 Latino/a Politics

Comparative or International Politics

Comparative Politics
POL 3453 The Politics of Mexico
POL 3463 Politics of the Third World
POL 3553 Social Policy in Modern Welfare States

International Politics
POL 3053 United States–Latin American Relations
POL 3763 Globalization
POL 4103 Latin America and the World

Political Theory

POL 3153 Political Philosophy: Contemporary
POL 3163 Introduction to Feminist Theory
POL 3203 African American Political Thought

Public Administration or Public Law

Public Administration
POL 3413 The Politics of Urban Development

Public Law
POL 3013 The American Legal Process
POL 3023 Civil Liberties in American Law and Practice

Concentration in Sociology

1. 12 required semester credit hours:

SOC 1013 Introduction to Sociology
SOC 3043 Race and Ethnic Relations

SOC 3343 Classical Sociological Theory
or
SOC 3353 Contemporary Sociological Theory

SOC 3373 Qualitative Research Methods
or
SOC 3393 Quantitative Research Methods

2. 6 upper-division semester credit hours selected from the following:

SOC 3013 Social Stratification
SOC 3043 Race and Ethnic Relations
SOC 3093 Religion and Society
SOC 3263 Latinas in U.S. Society
SOC 3283 Poverty
SOC 3433 Mexican Immigration and U.S. Society

Concentration in Spanish

18 required semester credit hours:

SPN 3013 Spanish Phonetics and Pronunciation
or
SPN 3113 Linguistic Structures of Spanish

SPN	3043	Advanced Reading
SPN	3063	Grammar and Composition
SPN	3463	Latin American Literature to Modernism
		or
SPN	3473	Latin American Literature since Modernism
SPN	3623	Latin American Culture and Civilization
SPN	4123	The Spanish of the Southwest
		or
BBL	4003	Spanish for Bilingual Instructional Delivery
		or
ENG	4613	Topics in Mexican American Literature (when content includes Spanish literature and if not taken for the major requirement)

C. 39 semester credit hours of electives

Mexican American Studies majors are encouraged to select a double major in the 39-semester-hour content of their concentration (i.e., Anthropology, Bicultural-Bilingual Studies, Business Administration, History, English, Political Science, Sociology, Spanish).

B.A. in Mexican American Studies – Recommended Four-Year Academic Plan

Courses	Credit Hours
YEAR 1	
Fall	
ANT 2033 or ANT 2043 (core)	3
BBL 2003 (core and major)	3
WRC 1013 (core)	3
Mathematics core	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
MAS 2023 (core)	3
POL 1013 (core)	3
WRC 1023 (core)	3
Natural Sciences Level II core	3
U.S. History & Diversity core	3
Total semester hours	*15*
YEAR 2	
Fall	
ANT 2053 or ANT 2063 (core)	3
ECO 2003 (core)	3
MAS 2013	3
POL 1133 or POL 1213 (core)	3
Concentration courses (see Section B)	3
Total semester hours	*15*
Spring	
MAS 3033	3
ENG 2213, ENG 2383, or ENG 2423 (core)	3
Concentration courses (see Section B)	3
Degree Requirement course (see Section A.2.)	3
Elective in MAS (MAS 3043 or MAS 3413)	3
Total semester hours	*15*
YEAR 3	
Fall	
ENG 3513 or ENG 4613	3
Concentration courses (see Section B)	6
Elective in MAS	3
Upper-division electives (see Section C)	3
Total semester hours	*15*
Spring	
Concentration courses (see Section B)	6
Upper-division electives (see Section C)	9
Total semester hours	*15*
YEAR 4	
Fall	
Electives (enough upper-division hours to meet required 39, see Section C)	15
Total semester hours	15
Spring	
MAS 4083*	3
Electives (enough upper-division hours to meet required 39; see Section C)	12
Total semester hours	*15*

* It is recommended that MAS and concentration courses be completed before taking MAS 4083, as this is the capstone course for the major.

Minor in Bicultural Studies

All students pursuing a Minor in Bicultural Studies must complete 18 semester credit hours.

A. 6 semester credit hours of courses on bicultural studies selected from the following:

BBL	2003	Language, Culture, and Society
BBL	2023	Latino Cultural Expressions
MAS	2013	Introduction to Chicano(a) Studies

B. 6 semester credit hours of courses on language selected from the following:

BBL	3013	Language Analysis and Bilingualism
BBL	3133	Language Development in Bilinguals
ESL	3003	Language and Schooling
MAS	3043	Social Psychological Considerations in Mexican American Communities

C. 6 semester credit hours of courses on culture and society selected from the following:

BBL	2033	Cultures of the Southwest
BBL	3023	Mexican American Culture
BBL	3033	Mexican Americans in the Southwest
BBL	4953	Special Studies in Bilingual and Bicultural Studies

To declare a Minor in Bicultural Studies, obtain advice, or seek approval of substitutions for course requirements, students should consult an academic advisor in the College of Education and Human Development Advising and Certification Center.

Minor in English as a Second Language

All students pursuing a Minor in English as a Second Language must complete 18 semester credit hours.

A. 12 semester credit hours of courses in English as a second language:

ESL	3003	Language and Schooling
ESL	3033	Foundations of English as a Second Language
ESL	3053	Literacy in a Second Language

And one of the following:

BBL	3013	Language Analysis and Bilingualism
BBL	3133	Language Development in Bilinguals
ESL	3023	Second Language Teaching and Learning in EC–6
ESL	3063	Second Language Acquisition in Early Adolescence
ESL	4013	Principles of First and Second Language Acquisition

B. 3 semester credit hours of courses on culture and society selected from the following:

BBL	2033	Cultures of the Southwest
BBL	3023	Mexican American Culture
BBL	3033	Mexican Americans in the Southwest

C. 3 semester credit hours of courses on language minority education selected from the following:

BBL	3053	Foundations of Bilingual Studies
BBL	4033	Assessment, Learning, and Motivation in Bicultural-Bilingual Classrooms
BBL	4953	Special Studies in Bilingual and Bicultural Studies

To declare a Minor in English as a Second Language, obtain advice, or seek approval of substitutions for course requirements, students should consult an academic advisor in the College of Education and Human Development Advising and Certification Center.

BILINGUAL EDUCATION AND ESL TEACHER CERTIFICATION CONCENTRATIONS

Bachelor of Arts Degree in Interdisciplinary Studies (Early Childhood–Grade 6 Bilingual Generalist Certification Concentration)

The minimum number of semester credit hours required for the Interdisciplinary Studies (IDS) degree with early childhood–grade 6 bilingual generalist certification is 128, at least 39 of which must be at the upper-division level.

Spanish language proficiency requirement: Proficiency in oral and written Spanish at the advanced level is a requirement for bilingual generalist coursework and certification at UTSA. Students are required to complete the ALPS (Assessment for Language Proficiency in Spanish) prior to admission to the bilingual generalist certification program.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies with teacher certification must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1023 is recommended to satisfy the core requirement in Mathematics. BIO 1233 and either AST 1033 or PHY 1013 should be used to satisfy the core requirement in Natural Sciences. IDS 2303 or IDS 2313 is recommended to satisfy the core requirement in Literature. BBL 2023 is recommended to satisfy the core requirement in Visual and Performing Arts. HIS 1053 and HIS 2053 are recommended to satisfy the core requirement in United States History and Diversity. POL 1133 is recommended to satisfy a core requirement in Political Science. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Science. ECO 2003 is recommended to satisfy the core requirement in Economics. IDS 2213 is recommended to satisfy the core requirement in World Society and Issues.

Degree Requirements (41 semester credit hours)

A. IDS Core Courses (15 semester credit hours):

IDS	2113	Society and Social Issues
IDS	3003	Science and Humanity
IDS	3013	Diversity, Equity, and the Social Sciences
IDS	3123	Culture, Literature, and Fine Arts
IDS	3713	Interdisciplinary Inquiry

B. IDS Support Courses (26 semester credit hours):

ECE	3313	Play, Creativity, and Learning
EDU	2103	Social Foundations for Education in a Diverse U.S. Society
IDS	2013	Introduction to Learning and Teaching in a Culturally Diverse Society
IDS	2403	Physical Science
IDS	2413	Earth Systems Science
IDS	3201	Inquiry in Physical Science

IDS	3211	Inquiry in Earth Systems Science
MAT	1153	Essential Elements in Mathematics I
MAT	1163	Essential Elements in Mathematics II
SPE	3603	Introduction to Special Education

Certification Requirements (48 semester credit hours)

Texas Success Initiative (TSI) requirements must be satisfied before enrollment in Certification, Professional Education, and Student Teaching coursework.

A. Early Childhood–Grade 6 Bilingual Generalist courses (24 semester credit hours):

BBL	3013	Language Analysis and Bilingualism
BBL	3023	Mexican American Culture or
BBL	3033	Mexican Americans in the Southwest
BBL	3053	Foundations of Bilingual Studies (prerequisite to BBL 4033, BBL 4063, BBL 4073, and BBL 4403)
BBL	3133	Language Development in Bilinguals
BBL	3143	Children's Literature for Bilingual Learners
ESL	3023	Second Language Teaching and Learning in EC–6
ESL	3053	Literacy in a Second Language
RDG	4833	Organizing Reading Programs for Differentiated Instruction–EC–6 (recommended) or
RDG	3803	Writing Development and Processes

B. Professional Education courses (24 semester credit hours):

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

BBL	4033*	Assessment, Learning, and Motivation in Bicultural-Bilingual Classrooms
BBL	4063*	Bilingual Approaches to Content-Based Learning
BBL	4073*	Language Arts in a Bicultural-Bilingual Program
BBL	4353	Approaches to Teaching Science EC–6
BBL	4403*	Approaches to Teaching Mathematics EC–6
C&I	4616	Student Teaching: Early Childhood–Grade 6
RDG	3823	Reading Comprehension–EC–6

*concurrent enrollment

B.A. in Interdisciplinary Studies, Early Childhood–Grade 6 Bilingual Generalist Certification Concentration – Recommended Four-Year Academic Plan

Courses	Credit Hours
YEAR 1	
Fall	
BIO 1233 (core)	3
HIS 1053 (core)	3
MAT 1023 (core)	3
POL 1013 (core)	3
WRC 1013 (core)	3
Total semester hours	*15*
Spring	
AST 1033 or PHY 1013 (core)	3
HIS 2053 (core)	3
IDS 2013	3
IDS 2113 (core and major)	3
WRC 1023 (core)	3
Total semester hours	*15*
Summer	
ECO 2003 (core)	3
IDS 2213 (core)	3
POL 1133 (core)	3
Total semester hours	*9*
YEAR 2	
Fall	
BBL 2023 (core)	3
EDU 2103	3
IDS 2303 or 2313 (core)	3
IDS 3013	3
MAT 1153	3
Total semester hours	*15*
Spring	
BBL 3053	3
IDS 2403	3
IDS 3123	3
IDS 3201	1
MAT 1163	3
Total semester hours	*13*
Summer	
IDS 2413	3
IDS 3211	1
RDG 4833 or 3803	3
SPE 3603	3
Total semester hours	*10*
ADMISSION TO THE TEACHER CERTIFICATION PROGRAM	
YEAR 3	
Fall	
BBL 3013	3
BBL 3133	3
ECE 3313	3
ESL 3023	3
IDS 3003	3
Total semester hours	*15*

Courses	Credit Hours
Spring	
BBL 3023 or 3033	3
BBL 3143	3
BBL 4353	3
ESL 3053	3
RDG 3823	3
Total semester hours	*15*
Summer	
IDS 3713	3
Total semester hours	*3*
YEAR 4	
Fall	
BBL 4033*	3
BBL 4063*	3
BBL 4073*	3
BBL 4403*	3
Total semester hours	*12*
Spring	
C&I 4616	6
Total semester hours	*6*

* Must be taken concurrently.

Bachelor of Arts Degree in Interdisciplinary Studies (Grades 4–8 Bilingual Generalist Certification Concentration)

The minimum number of semester credit hours required for the Interdisciplinary Studies (IDS) degree with grades 4–8 bilingual generalist certification is 133, at least 39 of which must be at the upper-division level.

Spanish language proficiency requirement: Proficiency in oral and written Spanish at the advanced level is a requirement for bilingual generalist coursework and certification at UTSA. Students are required to complete the ALPS (Assessment for Language Proficiency in Spanish) prior to admission to the bilingual generalist certification program.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies with teacher certification must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1023 should be used to satisfy the core requirement in Mathematics. BIO 1233 should be used to satisfy a core requirement in Natural Sciences. IDS 2303 or IDS 2313 is recommended to satisfy the core requirement in Literature. BBL 2023 is recommended to satisfy the core requirement in Visual and Performing Arts. HIS 1053 and HIS 2053 should be used to satisfy the core requirement in United States History and Diversity. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Science. ECO 2003 is recommended to satisfy the core requirement in Economics. IDS 2213 should be used to satisfy the core requirement in World Society and Issues.

Degree Requirements (76 semester credit hours)

A. IDS Core Courses (15 semester credit hours):

IDS	2113	Society and Social Issues
IDS	3003	Science and Humanity
IDS	3013	Diversity, Equity, and the Social Sciences
IDS	3123	Culture, Literature, and Fine Arts
IDS	3713	Interdisciplinary Inquiry

B. IDS Support Courses (61 semester credit hours):

1. 55 semester credit hours of required courses:

BIO	1233	Contemporary Biology I
EDP	3303	Learning and Development in the Middle School Context (Grades 4–8)
EDU	2103	Social Foundations for Education in a Diverse U.S. Society
GRG	1023	World Regional Geography
HIS	1053	United States History: Civil War Era to Present
HIS	2053	Texas History
IDS	2013	Introduction to Learning and Teaching in a Culturally Diverse Society
IDS	2213	World Civilization since the Fifteenth Century
IDS	2403	Physical Science
IDS	2413	Earth Systems Science
IDS	3201	Inquiry in Physical Science
		or
IDS	3211	Inquiry in Earth Systems Science
MAT	1023	College Algebra with Applications
MAT	1093	Precalculus
MAT	1153	Essential Elements in Mathematics I
MAT	1163	Essential Elements in Mathematics II
MAT	1203	Calculus Concepts and Applications
RDG	3523	Reading for Teachers–Grades 4–8
RDG	3633	Literature and Other Texts Across the Content Areas–Grades 4–8
SPE	3603	Introduction to Special Education

2. 3 semester credit hours from Level One or Level Two Science courses in a different discipline from science courses taken for Core Curriculum requirement.

3. 3 semester credit hours from the following:*

BBL	4003	Spanish for Bilingual Instructional Delivery
SPN	3063	Grammar and Composition
SPN	4003	Advanced Language Skills

* Students must complete one of the three listed courses with a grade of "C–" or higher. Grades of "CR" received from a Challenge Examination of a UTSA course or College Level Examination Program (CLEP) will not be accepted.

Certification Requirements (33 semester credit hours)

Texas Success Initiative (TSI) requirements must be satisfied before enrollment in Certification, Professional Education, and Student Teaching coursework.

A. 12 semester credit hours of required courses:

BBL	3053	Foundations of Bilingual Studies
BBL	3133	Language Development in Bilinguals
ESL	3053	Literacy in a Second Language
ESL	3063	Second Language Acquisition in Early Adolescence

B. Professional Education courses (21 semester credit hours):

The following courses require an advisor code and are restricted to students who have applied and been accepted into the Teacher Certification Program.

BBL	4033*	Assessment, Learning, and Motivation in Bicultural-Bilingual Classrooms
BBL	4063*	Bilingual Approaches to Content-Based Learning
BBL	4073*	Language Arts in a Bicultural-Bilingual Program
C&I	4433	Approaches to Teaching Science–Grades 4–8
		or
C&I	4443	Approaches to Teaching Mathematics–Grades 4–8
C&I	4603	Mathematics and Science Approaches and Classroom Management Strategies–Grades 4–8
C&I	4626	Student Teaching: Grades 4–8

*concurrent enrollment

B.A. in Interdisciplinary Studies, Grades 4–8 Bilingual Generalist Certification Concentration – Recommended Four-Year Academic Plan

Courses	Credit Hours
YEAR 1	
Fall	
BBL 2023 (core)	3
BIO 1233 (core and major)	3
HIS 1053 (core and major)	3
MAT 1023 (core and major)	3
WRC 1013 (core)	3
Total semester hours	*15*
Spring	
HIS 2053 (core and major)	3
IDS 2013	3
IDS 2113 (core and major)	3
WRC 1023 (core)	3
Natural Sciences Level II core	3
Total semester hours	*15*
Summer	
ECO 2003 (core)	3
IDS 2403	3
POL 1013 (core)	3
Total semester hours	*9*
YEAR 2	
Fall	
EDU 2103	3
IDS 2303 or 2313 (core)	3
IDS 2413	3
MAT 1093	3
MAT 1153	3
Total semester hours	*15*
Spring	
IDS 3013	3
IDS 3123	3
MAT 1163	3
MAT 1203	3
POL 1133 or 1213 (core)	3
Total semester hours	*15*
Summer	
GRG 1023	3
IDS 2213 (core and major)	3
SPE 3603	3
Natural Sciences Level I or II	3
Total semester hours	*12*

ADMISSION TO THE TEACHER CERTIFICATION PROGRAM

YEAR 3	
Fall	
BBL 3053	3
EDP 3303	3
ESL 3063	3
IDS 3003	3
IDS 3201 or 3211	1
BBL 4003 or SPN 3063 or SPN 4003	3
Total semester hours	*16*
Spring	
BBL 3133	3
ESL 3053	3
IDS 3713	3
RDG 3523	3
RDG 3633	3
Total semester hours	*15*
YEAR 4	
Fall	
BBL 4033*	3
BBL 4063*	3

Courses	Credit Hours
BBL 4073*	3
C&I 4433 or 4443	3
C&I 4603	3
Total semester hours	*15*
Spring	
C&I 4626	6
Total semester hours	*6*

* Must be taken concurrently.

Bachelor of Arts Degree in Interdisciplinary Studies (Early Childhood–Grade 6 ESL Generalist Certification Concentration)

The minimum number of semester credit hours required for the Interdisciplinary Studies (IDS) degree with early childhood–grade 6 ESL generalist certification is 128, at least 39 of which must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies with teacher certification must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1023 is recommended to satisfy the core requirement in Mathematics. BIO 1233 and either AST 1033 or PHY 1013 should be used to satisfy the core requirement in Natural Sciences. IDS 2303 or IDS 2313 is recommended to satisfy the core requirement in Literature. BBL 2023 is recommended to satisfy the core requirement in Visual and Performing Arts. HIS 1053 and HIS 2053 should be used to satisfy the core requirement in United States History and Diversity. POL 1133 is recommended to satisfy a core requirement in Political Science. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Science. ECO 2003 is recommended to satisfy the core requirement in Economics. A foreign language course should be used to satisfy the core requirement in World Society and Issues, if it is needed to meet the language requirement.

Degree Requirements (29–32 semester credit hours)

A. IDS Core Courses (15 semester credit hours):

IDS 2113 Society and Social Issues
IDS 3003 Science and Humanity
IDS 3013 Diversity, Equity, and the Social Sciences
IDS 3123 Culture, Literature, and Fine Arts
IDS 3713 Interdisciplinary Inquiry

B. IDS Support Courses (14 semester credit hours):

IDS 2403 Physical Science
IDS 2413 Earth Systems Science
IDS 3201 Inquiry in Physical Science
IDS 3211 Inquiry in Earth Systems Science
MAT 1153 Essential Elements in Mathematics I
MAT 1163 Essential Elements in Mathematics II

C. Language Requirement (0–3 semester credit hours):

Documented oral communication skills in a language other than English at the intermediate level (2000 level). Courses include, but are not limited to: ASL, CHN, FRN, GER, ITL, JPN, RUS, SPN at 2013 level, and SPN 2003 Spanish for Elementary Education. Grades of "CR" received from a Challenge Examination of a UTSA course in which student demonstrates oral communication skills in a language other than English will be accepted.

Certification Requirements (36 semester credit hours)

Programs are subject to change without notice due to changes in the state's certification and/or program approval requirements.

A. ESL Special Delivery System Core (18 semester credit hours):

ENG 3333 Introduction to the Structure of English
ESL 3003 Language and Schooling
ESL 3023 Second Language Teaching and Learning in EC–6
ESL 3033 Foundations of English as a Second Language
ESL 3053 Literacy in a Second Language
ESL 4013 Principles of First and Second Language Acquisition

B. Other Certification Courses (18 semester credit hours):

EDU 2103 Social Foundations for Education in a Diverse U.S. Society
IDS 2013 Introduction to Learning and Teaching in a Culturally Diverse Society
RDG 3513 Children's Literature–EC–6
RDG 3803 Writing Development and Processes
SPE 3603 Introduction to Special Education

The following course requires an advisor code and is restricted to students who have applied for and been accepted into the Teacher Certification Program.

RDG 3823 Reading Comprehension–EC–6

Professional Education Requirements (24 semester credit hours)

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

C&I 4303 Approaches to Teaching Social Studies Incorporating Language Arts and Fine Arts EC–6
C&I 4353 Approaches to Teaching Science EC–6
C&I 4403 Approaches to Teaching Mathematics EC–6
C&I 4616 Student Teaching: Early Childhood–Grade 6
ECE 4203 Assessment and Evaluation in EC–6
ESL 4003 Approaches to Second Language Teaching
RDG 4833 Organizing Reading Programs for Differentiated Instruction–EC–6

B.A. in Interdisciplinary Studies, Early Childhood–Grade 6 ESL Generalist Certification Concentration – Recommended Four-Year Academic Plan

Courses	Credit Hours
YEAR 1	
Fall	
BIO 1233 (core)	3
HIS 1053 (core)	3
MAT 1023 (core)	3
POL 1013 (core)	3
WRC 1013 (core)	3
Total semester hours	*15*
Spring	
AST 1033 or PHY 1013 (core)	3
HIS 2053 (core)	3
IDS 2013	3
IDS 2113 (core and major)	3
WRC 1023 (core)	3
Total semester hours	*15*
Summer	
ECO 2003 (core)	3
POL 1133 (core)	3
Intermediate-level foreign language* or World Society & Issues core	3
Total semester hours	*9*
YEAR 2	
Fall	
BBL 2023 (core)	3
EDU 2103	3
ESL 3003	3
IDS 2303 or 2313 (core)	3
MAT 1153	3
Total semester hours	*15*
Spring	
ESL 3023	3
ESL 3033	3
ESL 4013	3
IDS 2403	3
IDS 3201	1
MAT 1163	3
Total semester hours	*16*
Summer	
IDS 2413	3
IDS 3211	1
ESL 3053	3
RDG 3803	3
Total semester hours	*10*

ADMISSION TO THE TEACHER CERTIFICATION PROGRAM

Courses	Credit Hours
YEAR 3	
Fall	
ENG 3333	3
IDS 3003	3
IDS 3013	3
SPE 3603	3
Total semester hours	*12*
Spring	
C&I 4353	3
C&I 4403	3
ECE 4203	3
RDG 3823	3
Total semester hours	*12*
Summer	
IDS 3713	3
RDG 3513	3
Total semester hours	*6*
YEAR 4	
Fall	
C&I 4303	3
ESL 4003	3
IDS 3123	3
RDG 4833	3
Total semester hours	*12*
Spring	
C&I 4616	6
Total semester hours	*6*

* Grades of "CR" received from a Challenge Examination of a UTSA course in which student demonstrates oral communication skills in a language other than English (at the 2000 level) will be accepted.

Bachelor of Arts Degree in Interdisciplinary Studies (Grades 4–8 ESL Certification Concentration)

Students pursuing Grades 4–8 ESL certification will complete a program of study that focuses on the content areas of reading, language arts and social studies. The minimum number of semester credit hours required for the IDS degree with Grades 4–8 ESL certification is 129–132, at least 39 of which must be at the upper-division level.

Core Curriculum requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies (Grades 4–8 ESL certification concentration) must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1023 or a higher math course should be used to satisfy the core requirement in Mathematics. IDS 2303 or IDS 2313 is recommended

to satisfy the core requirement in Literature. BBL 2023 is recommended to satisfy the core requirement in Visual and Performing Arts. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Science. ECO 2003 is recommended to satisfy the core requirement in Economics. IDS 2213 is recommended to satisfy the core requirement in World Society and Issues.

Degree Requirements (36–39 semester credit hours)

A. IDS Core Courses (15 semester credit hours):

IDS	2113	Society and Social Issues
IDS	3003	Science and Humanity
IDS	3013	Diversity, Equity, and the Social Sciences
IDS	3123	Culture, Literature, and Fine Arts
IDS	3713	Interdisciplinary Inquiry

B. IDS Support Courses (21 semester credit hours):

IDS	2083	Technology for Learning and Teaching
IDS	2403	Physical Science
IDS	2413	Earth Systems Science
MAT	1023	College Algebra with Applications
MAT	1153	Essential Elements in Mathematics I
MAT	1163	Essential Elements in Mathematics II

3 semester credit hours from the following:

BBL	3033	Mexican Americans in the Southwest
MAS	3413	Mexican American Family
SOC	3043	Race and Ethnic Relations
SOC	3283	Poverty
SOC	3423	Mass Media in Society

C. Language Requirement (0–3 semester credit hours):

Documented oral communication skills in a language other than English at the intermediate level (2000 level). Courses include, but are not limited to: ASL, CHN, FRN, GER, ITL, JPN, RUS, SPN at 2013 level and SPN 2003 Spanish for Elementary Education. Grades of "CR" received from a Challenge Examination of a UTSA course in which student demonstrates oral communication skills in a language other than English will be accepted.

Certification Requirements (57 semester credit hours)

Programs are subject to change without notice due to changes in the state's certification and/or program approval requirements.

A. ESL Special Delivery System Core (18 semester credit hours):

ENG	3333	Introduction to the Structure of English
ESL	3003	Language and Schooling
ESL	3033	Foundations of English as a Second Language
ESL	3053	Literacy in a Second Language
ESL	3063	Second Language Acquisition in Early Adolescence
ESL	4013	Principles of First and Second Language Acquisition

B. Other Certification Courses (24 semester credit hours):

BBL	3403	Cultural and Linguistic Diversity in a Pluralistic Society
EDP	3303	Learning and Development in the Middle School Context (Grades 4–8)
EDU	2103	Social Foundations for Education in a Diverse U.S. Society
IDS	2013	Introduction to Learning and Teaching in a Culturally Diverse Society
RDG	3523	Reading for Teachers–Grades 4–8
RDG	3533	Reading and Writing Across the Disciplines–Grades 4–8
		or
RDG	3633	Literature and Other Texts Across the Content Areas–Grades 4–8
RDG	3803	Writing Development and Processes
SPE	3603	Introduction to Special Education

C. Professional Education Courses (15 semester credit hours):

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

C&I	4533	Language Arts and Social Studies Approaches and Classroom Management Strategies–Grades 4–8
C&I	4996	Student Teaching: ESL Grades 4–8
EDP	4203	Assessment and Evaluation
ESL	4003	Approaches to Second Language Teaching

B.A. in Interdisciplinary Studies, Grades 4–8 ESL Certification Concentration – Recommended Four-Year Academic Plan

Courses	Credit Hours
YEAR 1	
Fall	
MAT 1023 (core)	3
POL 1013 (core)	3
WRC 1013 (core)	3
Natural Sciences Level I core	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
IDS 2013	3
IDS 2113 (core)	3
WRC 1023 (core)	3
Natural Sciences Level II core	3
U.S. History & Diversity core	3
Total semester hours	*15*

Courses	Credit Hours
Summer	
ECO 2003 (core)	3
IDS 2213 (core)	3
IDS 2403	3
Total semester hours	*9*

YEAR 2

Fall	
EDU 2103	3
ESL 3003	3
IDS 2413	3
IDS 3013	3
MAT 1153	3
Total semester hours	*15*
Spring	
ESL 3033	3
IDS 2083	3
IDS 2303 or 2313 (core)	3
IDS 3003	3
MAT 1163	3
Total semester hours	*15*
Summer	
BBL 2023 (core)	3
ESL 3053	3
POL 1133 or 2113 (core)	3
SPE 3603	3
Total semester hours	*12*

ADMISSION TO THE TEACHER CERTIFICATION PROGRAM

YEAR 3

Fall	
EDP 3303	3
ENG 3333	3
IDS 3713	3
RDG 3803	3
Foreign language*	0-3
Total semester hours	*12-15*
Spring	
BBL 3033, or MAS 3413, or SOC 3043, 3283 or 3423	3
BBL 3403	3
ESL 3063	3
ESL 4013	3
RDG 3523	3
Total semester hours	*15*

Courses	Credit Hours
YEAR 4	
Fall	
C&I 4533	3
EDP 4203	3
ESL 4003	3
IDS 3123	3
RDG 3533 or 3633	3
Total semester hours	*15*
Spring	
C&I 4996	6
Total semester hours	*6*

* Grades of "CR" received from a Challenge Examination of a UTSA course in which student demonstrates oral communication skills in a language other than English (at the 2000 level) will be accepted.

English as a Second Language (ESL) Supplemental Teacher Certification

ESL Supplemental Teacher Certification may be completed by any teacher certification student. Courses in this sequence will provide the necessary coursework addressing the TExES ESL Supplemental examination. Eighteen (18) semester credit hours are required for the ESL Supplemental Teacher Certification, however, 6 of these hours are already included in other teacher certification programs. Students pursuing EC–6 and grades 4–8 teacher certification may complete the ESL Supplemental Teacher Certification with only 12 additional hours of coursework.

BBL	3023	Mexican American Culture or
BBL	3403	Cultural and Linguistic Diversity in a Pluralistic Society (required for EC–6 and grades 4–8 teacher certification programs)
ESL	3003	Language and Schooling
ESL	3023	Second Language Teaching and Learning in EC–6 (required for EC–6 teacher certification programs) or
ESL	3063	Second Language Acquisition in Early Adolescence (required for grades 4–8 teacher certification programs)
ESL	3033	Foundations of English as a Second Language
ESL	3053	Literacy in a Second Language
ESL	4003	Approaches to Second Language Teaching

DEPARTMENT OF COUNSELING

The Department of Counseling provides support work for undergraduate degrees and offers a Master of Arts degree in Counseling and a Doctor of Philosophy degree in Counselor Education and Supervision. The nationally CACREP (Council for Accreditation of Counseling and Related Educational Programs) accredited master's and doctoral degrees offer the opportunity for advanced study and professional development in the field of counseling. (See the *UTSA Graduate Catalog* for further information.)

DEPARTMENT OF EDUCATIONAL LEADERSHIP AND POLICY STUDIES

The Department of Educational Leadership and Policy Studies prepares educators to become transformational leaders who can work effectively in diverse, ambiguous, and challenging contexts. The goals of this transformational leadership include equity, excellence, social justice, democracy, risk-taking, and responsiveness to community needs. Faculty in the Department of Educational Leadership and Policy Studies are strongly committed to developing collaborative and responsive relationships with area schools and communities. The Department offers the Master of Education degree in Educational Leadership and Policy Studies and the Doctor of Education degree in Educational Leadership. (See the *UTSA Graduate Catalog* for further information.)

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

Mission Statement

> The mission of the Department of Educational Psychology is to promote the development and application of scientific knowledge. To do so, our faculty members are committed to: Producing high-quality, innovative research and scholarship; Providing effective and culturally inclusive instructional technologies to prepare practitioners and researchers to use the tools, resources, and strategies necessary to improve the educational experience of all learners; Preparing culturally competent scientist-practitioners and researchers to effectively contribute to the applied psychological development and well-being of children and adolescents; Providing responsive educational and psychological services to the local community, schools, and beyond; and, Engaging in participatory and leadership roles in local, national, and international institutions and organizations.

The Department of Educational Psychology faculty provide valuable support to other departments and program areas within the College of Education and Human Development and throughout the University by teaching courses based on foundational educational psychology concepts in areas such as learning, motivation, development, assessment, and research methods. At this time, the Department of Educational Psychology offers one graduate degree: the Master of Arts in School Psychology. (See the *UTSA Graduate Catalog* for further information.)

DEPARTMENT OF HEALTH AND KINESIOLOGY

The Department of Health and Kinesiology offers Bachelor of Science degrees for students majoring in Health and Kinesiology. Minors in Health and Athletic Coaching and a Certificate in Athletic Coaching are also offered.

The Health degree provides students the opportunity to prepare for health careers in city, county, state and national government health agencies; corporate wellness programs; and voluntary health agencies. The degree requires both academic coursework and practical experience via an internship and helps to prepare students for admission to graduate programs in public health and health promotion. Students interested in pursuing a major or minor in Health are required to consult with the Advising and Certification Center of the College of Education and Human Development.

Students pursuing a Bachelor of Science degree in Kinesiology will select a concentration in athletic medicine, exercise science and wellness, or physical education. Students with a concentration in athletic medicine are prepared to pursue careers in athletic training, physical therapy, or occupational therapy. Physical and/or occupational therapy licensure requires additional academic training in an accredited graduate program. Students interested in pursuing licensure in athletic training must apply and be accepted into the athletic training program at UTSA. Students with a concentration in exercise science and wellness are trained for careers in exercise physiology, clinical exercise, and fitness programming in corporate, commercial, and public settings. Graduates of this concentration are prepared for professional certifications in fitness and exercise physiology. The physical education concentration provides students the academic and professional experience as required by the State Board for Educator Certification. To be certified as a teacher by the State of Texas, a student must complete his or her coursework, have practical teaching experience (student teaching), and pass the Texas Examinations of Educator Standards (TExES). The graduate of this program will then be certified to teach physical education in grades pre-kindergarten–12.

Department Honors

The Department of Health and Kinesiology awards Department Honors to certain outstanding students and provides the opportunity for advanced study under close faculty supervision.

Selection of honors designation is based on the student's academic performance and recommendation by the faculty of the student's major discipline. To be eligible for the program, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. The minimum grade point averages must be maintained for students to receive the approval of the Department Honors Committee and the discipline faculty. Students applying for Department Honors are expected to enroll in the appropriate honors thesis course during their final two semesters. The completed thesis must be approved by the supervising faculty sponsor and another departmental faculty member. Students interested in this program should contact their professors for additional information.

Internship Policy

Experiential learning is a valuable element for health and kinesiology professionals. An internship enables the student to gain practical experience as a professional under conditions conducive to educational development. The internship is a time-limited, supervised period of health or kinesiology education activities carried out in a kinesiology- or health-oriented organization. All Health and Kinesiology majors who are not in Teacher Certification options are required to complete an internship (6 semester credit hours, 360 hours of time on site).

Internship Eligibility

Health and Kinesiology majors are eligible to apply for an internship if they:

- have completed all degree requirements of the major and support work
- have a minimum grade point average (GPA) of 2.0
- are within 12 hours of graduation (including the 6 hours of the internship).

Students who do not meet the GPA requirement will not be allowed to complete the internship. The department advisor will assign students who do not meet the GPA requirement two upper-level courses (3 credit hours each) to take in place of the internship course.

Mandatory meetings are held in the semester prior to the student's enrolling in the internship. Meeting dates for each semester are published in the UTSA Class Schedule. These meetings are held in June (for Fall), October (for Spring), and March (for Summer). Students are required to meet with their academic advisor prior to the meeting to verify that they are eligible for the internship. This must be done by October 1st, March 1st, or May 1st for the respective internship meeting. An e-mail will be sent within the first week of classes to all Kinesiology and Health majors with more than 110 semester credit hours, to inform them of this requirement and to ease the burden on the advising staff. Students must bring a signed degree plan from their advisor to the mandatory internship meeting.

Students who miss the meeting must contact the department internship coordinator no later than three business days after the missed meeting to make special arrangements. Failure to do so will result in being ineligible for the internship in the following semester. Extenuating circumstances must be documented and will be considered on a case-by-case basis.

Students requesting an internship at a site that requires a criminal background check are responsible for having the background check completed and submitted to the internship site for approval. Students are responsible for paying any fees associated with the completion of the background check. Students must have the background check completed and accepted by the internship site when the work plan for the internship is submitted.

Appeal Process

Students who wish to appeal the internship requirement due to prior work experience may do so by completing and submitting the appeal form, available in the COEHD Advising and Certification Center, with written documentation to a three-member review committee. Prior work experience is defined as a minimum of three years full-time work experience in the field of the respective degree. Written documentation submitted with the form includes: 1) a letter from the student detailing his or her work experience, how it fits his or her degree plan, and his or her career goals; 2) the student's resume; and 3) a letter from his or her work supervisor verifying employment and stating the extent of their job responsibilities and the relationship to the degree. The appeals packet must be received by the department internship coordinator no later than October 7th, March 7th, or May 7th, for the Spring, Summer, or Fall semesters, respectively. The committee will meet prior to the internship meeting to discuss the appeals and make a recommendation to the Department Chair. Students who are denied appeals must attend the internship meeting and complete the internship.

Bachelor of Science Degree in Health (Community Health and Preventive Services Specialization)

This program provides students with the opportunity to pursue a Bachelor of Science degree in Health for students interested in careers in community health, public health and health promotion. All degree core, designated electives, and support work must be completed with a grade of "C–" or better.

Admission Policy

The goal of admission requirements for the Health degree is to provide its undergraduate students with a program of study with the highest possible standards. To achieve this goal, the admission policy is designed to identify those students most likely to succeed in health education. All applicants for admission to the Health degree will be admitted to the program as pre-health students. Academic performance for declaration of the Health major will be evaluated after the following criteria have been met. To declare a Health major, a pre-health student must have:

- completed 30 semester credit hours and be in good standing with the University
- successfully completed the following or equivalent courses with a grade of "C–" or better:

WRC	1013	Freshman Composition I
WRC	1023	Freshman Composition II
HTH	2413	Introduction to Community and Public Health

Applicants who have completed all of the above courses as equivalent transferable college credit with a grade of "C–" or better and have no UTSA coursework can declare a Health major if they:

- meet all UTSA undergraduate admission requirements
- have completed 30 semester credit hours.

A pre-health student will not be able to register for upper-division, majors-only courses at UTSA until they have completed the courses listed above with the required grade point average. A student can complete each course required for admission twice in order to reach the required grade; however, students who are not able to meet the criteria after completing the course for the second time will no longer be considered a pre-health student and their major will be changed from pre-health to undeclared (UND) in the University student record system. The student must then choose a major other than Health.

Academic advising for students seeking the degree is available in the College of Education and Human Development Advising and Certification Center.

The minimum number of semester credit hours for this degree, including the Core Curriculum requirements, is 120, at least 45 of which must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Health must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

STA 1053 should be used to satisfy the core requirement in Mathematics. BIO 1404 should be used to satisfy the Level One core requirement in Natural Science.

All candidates for the degree must complete the following degree requirements in addition to the Core Curriculum requirements.

Degree Requirements

A. Degree Core Requirements (48 semester credit hours of required courses):

HTH	2413	Introduction to Community and Public Health
HTH	3303	Physical Activity and Health
HTH	3503	Theories of Health Behavior
HTH	3513	Community Health
HTH	3523	Worksite Health Promotion
HTH	3533	Drugs and Health
HTH	3543	Growth and Development
HTH	3563	Child and Adolescent Health Promotion
HTH	4503	Human Disease and Epidemiology
HTH	4513	Consumer Health
HTH	4523	Understanding Human Sexuality
HTH	4533	Nutrition and Health
HTH	4543	Environmental Health and Safety
HTH	4936	Internship in Health
MGT	3013	Introduction to Organization Theory, Behavior, and Management
		or
MGT	4953	Special Studies in Management (when topic is Introduction to Health Care Management)

B. Support Work (26 semester credit hours of required courses):

BIO	1122	Laboratory Investigations in Biology
BIO	1404	Biosciences I
BIO	2083	Human Anatomy
BIO	2091	Human Anatomy Laboratory
BIO	2103	Human Physiology
BIO	2111	Human Physiology Laboratory
COM	1043	Introduction to Communication
KIN	2003	Computer Applications in Kinesiology and Health
MAT	1023	College Algebra with Applications
STA	1053	Basic Statistics

C. Designated electives (10 semester credit hours selected from the following):

HTH	2133	School Health
HTH	3043	Principles of Weight Management
HTH	3553	Emotional Wellness
HTH	4953	Special Studies in Health
KIN	2123	Fitness and Wellness Concepts
KIN	3051	Group Fitness Instruction
KIN	3071	Musculoskeletal Fitness Instruction
MGT	3023	Understanding People and Organizations
MKT	3013	Principles of Marketing
POL	3293	Political Movements
POL	3553	Social Policy in Modern Welfare States
POL	3603	Public Policy Formulation and Implementation
PSY	2533	Social Psychology
PSY	4253	Psychology of Health
SOC	2013	Social Problems
SOC	3163	Families in Society
SOC	3203	Gerontology
SOC	3213	Medical Sociology
SOC	3253	The Individual and Society

Or others by approval of the department advisor ONLY.

B.S. in Health – Recommended Four-Year Academic Plan

Courses	Credit Hours
YEAR 1	
Fall	
MAT 1023 (core)	3
POL 1013 (core)	3
WRC 1013 (core)	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Spring	
BIO 1122	2
BIO 1404 (core and major)	4
HTH 2413	3
STA 1053	3
WRC 1023 (core)	3
Total semester hours	*15*
YEAR 2	
Fall	
POL 1133 or POL 1213 (core)	3
Economics core	3
Natural Sciences core – Level II	3
U.S. History & Diversity core	3
World Society & Issue core	3
Total semester hours	*15*

Courses	Credit Hours
Spring	
BIO 2083/2091	3/1
COM 1043	3
HTH 3503	3
Literature core	3
Social & Behavioral Science core	3
Total semester hours	*16*
YEAR 3	
Fall	
BIO 2103/2111	3/1
HTH 3513	3
HTH 3563	3
HTH 4513	3
KIN 2003	3
Total semester hours	*16*
Spring	
HTH 3303	3
HTH 3523	3
HTH 3533	3
HTH 3543	3
HTH 4523	3
Designated elective	1
Total semester hours	*16*
YEAR 4	
Fall	
HTH 4503	3
HTH 4533	3
HTH 4543	3
Designated electives	6
Total semester hours	*15*
Spring	
HTH 4936	6
MGT 3013 or MGT 4953	3
Designated elective	3
Total semester hours	*12*

Minor in Health

All students pursuing the Minor in Health must complete the following 18 semester credit hours:

HTH	2413	Introduction to Community and Public Health
HTH	3503	Theories of Health Behavior
HTH	3533	Drugs and Health
HTH	4503	Human Disease and Epidemiology
HTH	4523	Understanding Human Sexuality
HTH	4533	Nutrition and Health

To declare a Minor in Health or to obtain advice, students should consult an advisor in the College of Education and Human Development Advising and Certification Center.

Bachelor of Science Degree in Kinesiology

This program provides students with the opportunity to pursue a Bachelor of Science degree in Kinesiology. Students are prepared for careers in athletic training, exercise science or teaching physical education (pre-kindergarten–12). All required Kinesiology (KIN) courses and support work must be completed with a grade of "C–" or better.

Academic advising for students seeking the Kinesiology degree is available in the College of Education and Human Development Advising and Certification Center.

The minimum number of semester credit hours for this degree, including the Core Curriculum requirements, is 120, of which at least 39 must be at the upper-division level.

Students seeking the Bachelor of Science degree in Kinesiology must fulfill University Core Curriculum requirements in the same manner as other students.

Bachelor of Science Degree in Kinesiology (Athletic Medicine Concentration)

This program provides students with the opportunity to pursue a Bachelor of Science degree in Kinesiology with a concentration in Athletic Medicine. Students are trained for careers in athletic training, and this is a pre-professional allied health training program for physical therapy and occupational therapy. Additional coursework may be required for acceptance into an allied health training program. Students should contact the Health Professions Office for details. All kinesiology degree core and support work must be completed with a grade of "C–" or better.

The minimum number of semester credit hours for this degree, including the Core Curriculum requirements, is 120, of which at least 39 must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Kinesiology with a concentration in Athletic Medicine must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

STA 1053 should be used to satisfy the core requirement in Mathematics. BIO 1404 and BIO 1413 should be used to satisfy the core requirement in Natural Sciences. SOC 1013 is recommended to satisfy the core requirement in Social and Behavioral Science.

Degree Requirements (90 semester credit hours)

A. Required KIN Courses (42 semester credit hours):

KIN	2003	Computer Applications in Kinesiology and Health
KIN	2303	Cultural and Scientific Foundations
KIN	3303	Athletic Injuries and Training Procedures
KIN	3313	Anatomy and Physiology for Kinesiology
KIN	3323	Biomechanics

KIN	3433	Exercise Physiology
KIN	3453	Fitness Programming and Exercise Prescription
KIN	4043	Therapeutic Modalities
KIN	4143	Advanced Athletic Training
KIN	4243	Musculoskeletal Rehabilitation
KIN	4253	Exercise Nutrition
KIN	4403	Motor Learning
KIN	4936	Internship in Kinesiology

B. Support Courses (48 semester credit hours):

BIO	1122	Laboratory Investigations in Biology
BIO	1404	Biosciences I
BIO	1413	Biosciences II
BIO	2091	Human Anatomy Laboratory
BIO	2111	Human Physiology Laboratory
BIO	3123	Comparative Vertebrate Anatomy
BIO	3153	Physiology of Human Systems
CHE	1103	General Chemistry I
CHE	1113	General Chemistry II
CHE	1121	General Chemistry I Laboratory
CHE	1131	General Chemistry II Laboratory
COM	1053	Business and Professional Speech
MAT	1073	Algebra for Scientists and Engineers
PHY	1603	Algebra-based Physics I
PHY	1611	Algebra-based Physics I Laboratory
PHY	1623	Algebra-based Physics II
PHY	1631	Algebra-based Physics II Laboratory
PSY	1013	Introduction to Psychology
SOC	1013	Introduction to Sociology
STA	1053	Basic Statistics

B.S. in Kinesiology, Athletic Medicine Concentration – Recommended Four-Year Academic Plan

Courses	Credit Hours
YEAR 1	
Fall	
KIN 2303	3
MAT 1073	3
PSY 1013	3
WRC 1013 (core)	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
BIO 1122	2
BIO 1404 (core and major)	4
KIN 2003	3
STA 1053 (core and major)	3
WRC 1023 (core)	3
Total semester hours	*15*

Courses	Credit Hours
YEAR 2	
Fall	
BIO 1413 (core and major)	3
CHE 1103/1121	3/1
KIN 3303	3
POL 1013 (core)	3
U.S. History & Diversity core	3
Total semester hours	*16*
Spring	
BIO 2111	3
BIO 3153	1
CHE 1113/1131	3/1
COM 1043	3
POL 1133 or POL 1213 (core)	3
SOC 1013 (core and major)	3
Total semester hours	*17*
YEAR 3	
Fall	
BIO 2091	1
BIO 3123	3
KIN 3313	3
KIN 4143	3
PHY 1603/1611	3/1
Literature core	3
Total semester hours	*17*
Spring	
KIN 3323	3
KIN 3433	3
KIN 4243	3
PHY 1623/1631	3/1
Economics core	3
Total semester hours	*16*
Year 4	
Fall	
KIN 3453	3
KIN 4043	3
KIN 4253	3
KIN 4403	3
Visual & Performing Arts core	3
Total semester hours	*15*
Spring	
KIN 4936	6
World Society & Issues core	3
Total semester hours	*9*

Bachelor of Science Degree in Kinesiology (Exercise Science and Wellness Concentration)

This program provides students with the opportunity to pursue a Bachelor of Science degree in Kinesiology with a concentration in Exercise Science and Wellness. Students are trained for careers in exercise science. All kinesiology degree core and support work must be completed with a grade of "C–" or better.

The minimum number of semester credit hours for this degree, including the Core Curriculum requirements, is 120, of which at least 39 must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Kinesiology with a concentration in Exercise Science and Wellness must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

STA 1053 should be used to satisfy the core requirement in Mathematics. BIO 1404 should be used to satisfy the Level One core requirement in Natural Sciences; BIO 1413 is recommended to satisfy the Level Two core requirement. SOC 1013 is recommended to satisfy the core requirement in Social and Behavioral Science.

Degree Requirements (84 semester credit hours)

A. Required KIN Courses (53 semester credit hours):

KIN	2003	Computer Applications in Kinesiology and Health
KIN	2123	Fitness and Wellness Concepts
KIN	2303	Cultural and Scientific Foundations
KIN	3051	Group Fitness Instruction
KIN	3071	Musculoskeletal Fitness Instruction
KIN	3213	First Aid and Injury Management
KIN	3303	Athletic Injuries and Training Procedures
KIN	3313	Anatomy and Physiology for Kinesiology
KIN	3323	Biomechanics
KIN	3433	Exercise Physiology
KIN	3443	Graded Exercise Testing and Fitness Assessment
KIN	3453	Fitness Programming and Exercise Prescription
KIN	4023	Exercise Psychology
KIN	4253	Exercise Nutrition
KIN	4403	Motor Learning
KIN	4936	Internship in Kinesiology
KIN	4973	Wellness Counseling
KIN	4983	Applied Exercise Science

B. Support Courses (29 semester credit hours):

BIO	1122	Laboratory Investigations in Biology
BIO	1404	Biosciences I
BIO	2083	Human Anatomy
BIO	2091	Human Anatomy Laboratory
BIO	2103	Human Physiology
BIO	2111	Human Physiology Laboratory
COM	1043	Introduction to Communication
HTH	3003	Survey of Drugs and Health
HTH	3553	Emotional Wellness
MAT	1023	College Algebra with Applications
STA	1053	Basic Statistics

C. Electives (2 semester credit hours)

B.S. in Kinesiology, Exercise Science and Wellness Concentration – Recommended Four-Year Academic Plan

Courses	Credit Hours
YEAR 1	
Fall	
KIN 2303	3
MAT 1023	3
POL 1013 (core)	3
WRC 1013 (core)	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
BIO 1122	2
BIO 1404 (core and major)	4
KIN 2123	3
WRC 1023 (core)	3
U.S. History & Diversity core	3
Total semester hours	*15*
YEAR 2	
Fall	
BIO 2083/2091	3/1
KIN 2003	3
STA 1053 (core and major)	3
Natural Sciences core – Level II	3
Social & Behavioral Science core	3
Total semester hours	*16*
Spring	
BIO 2103/2111	3/1
COM 1043	3
POL 1133 or POL 1213 (core)	3
Economics core	3
Visual & Performing Arts core	3
Total semester hours	*16*
YEAR 3	
Fall	
HTH 3003	3
KIN 3051	1
KIN 3213	3
KIN 3313	3
Elective	2
World Society & Issues core	3
Total semester hours	*15*

Courses	Credit Hours
Spring	
HTH 3553	3
KIN 3071	1
KIN 3323	3
KIN 3433	3
KIN 4023	3
Literature core	3
Total semester hours	*16*
YEAR 4	
Fall	
KIN 3303	3
KIN 3443	3
KIN 3453	3
KIN 4253	3
KIN 4403	3
Total semester hours	*15*
Spring	
KIN 4936	6
KIN 4973	3
KIN 4983	3
Total semester hours	*12*

Bachelor of Science Degree in Kinesiology (Physical Education Concentration)

This program provides students with the opportunity to pursue a Bachelor of Science degree in Kinesiology with a concentration in Physical Education. Students are prepared for careers in teaching physical education (pre-kindergarten–12). All kinesiology degree core and support work must be completed with a grade of "C–" or better.

Academic advising for students seeking the Kinesiology degree is available in the College of Education and Human Development Advising and Certification Center.

The minimum number of semester credit hours for this degree, including the Core Curriculum requirements, is 120, of which at least 39 must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Kinesiology with a concentration in Physical Education must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

STA 1053 should be used to satisfy the core requirement in Mathematics. BIO 1233 should be used to satisfy the Level One core requirement in Natural Sciences. SOC 1013 is recommended to satisfy the core requirement in Social and Behavioral Science.

Degree Requirements (84 semester credit hours)

A. Required KIN Courses (48 semester credit hours):

KIN	2003	Computer Applications in Kinesiology and Health
KIN	2303	Cultural and Scientific Foundations
KIN	2421	Outdoor Activities and Innovative Games
KIN	2441	Management and Organization in Kinesiology and Sports
KIN	3001	Skill Analysis in Physical Activity: Individual Activities
KIN	3011	Skill Analysis in Physical Activity: Team Sports I
KIN	3021	Skill Analysis in Physical Activity: Team Sports II
KIN	3031	Skill Analysis in Physical Activity: Dual Sports
KIN	3051	Group Fitness Instruction
KIN	3061	Foundational Movement
KIN	3103	Motor Development
KIN	3303	Athletic Injuries and Training Procedures
KIN	3313	Anatomy and Physiology for Kinesiology
KIN	3323	Biomechanics
KIN	3413	Tactics
KIN	3433	Exercise Physiology
KIN	4113	Evaluation
KIN	4123	Psychosocial Aspects of Exercise and Sport
KIN	4343	Movement Awareness
KIN	4403	Motor Learning
KIN	4423	Developmental/Adapted Physical Activity

and 1 hour of Kinesiology elective

B. Support Courses (21 semester credit hours):

BIO	1233	Contemporary Biology I
COM	1043	Introduction to Communication
EDP	3203	Learning and Development in the Secondary School Adolescent
EDU	2103	Social Foundations for Education in a Diverse U.S. Society
HTH	3013	Survey of Human Nutrition
IDS	2013	Introduction to Learning and Teaching in a Culturally Diverse Society
STA	1053	Basic Statistics

C. Professional Education courses (15 semester credit hours):

C&I	4716*	Student Teaching: All Level EC–12
KIN	4203*	Teaching Secondary Physical Education
KIN	4303*	Teaching Elementary Physical Education
RDG	3773*	Reading and Writing Across the Disciplines–Secondary

Courses marked with an asterisk (*) require an advisor code and are restricted to students who have applied and been accepted into the Teacher Certification Program.

All the courses listed for the Physical Education Concentration (84 hours) are required for teacher certification in physical education. Only the courses marked with an asterisk are restricted and require an advisor code and acceptance into the Teacher Certification Program. Advisor codes for these classes will be issued only if all prerequisites have been completed.

B.S. in Kinesiology, Physical Education Concentration – Recommended Four-Year Academic Plan

Courses	Credit Hours
YEAR 1	
Fall	
BIO 1233 (core and major)	3
KIN 2303	3
STA 1053 (core and major)	3
WRC 1013 (core)	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
KIN 2003	3
KIN 2441	1
WRC 1023 (core)	3
SOC 1013 (core)	3
Natural Sciences core – Level II	3
U.S. History & Diversity core	3
Total semester hours	*16*
YEAR 2	
Fall	
IDS 2013	3
KIN 3313	3
POL 1013 (core)	3
Literature core	3
World Society & Issues core	3
Total semester hours	*15*
Spring	
COM 1043	3
EDU 2103	3
KIN 3303	3
POL 1133 or POL 1213 (core)	3
Economics core	3
Visual & Performing Arts core	3
Total semester hours	*18*
YEAR 3	
Fall	
EDP 3203	3
KIN 2421	1
KIN 3051	1
KIN 3061	1
KIN 3103	3
KIN 3413	3
KIN 3433	3
KIN elective	1
Total semester hours	*16*
Spring	
KIN 3001	1
KIN 3011	1
KIN 3323	3
KIN 4123	3
KIN 4343	3
KIN 4423	3
RDG 3773	3
Total semester hours	*17*
YEAR 4	
Fall	
HTH 3013	3
KIN 3021	1
KIN 3031	1
KIN 4113	3
KIN 4203	3
KIN 4303	3
KIN 4403	3
Total semester hours	*17*
Spring	
C&I 4716	6
Total semester hours	*6*

Minor in Athletic Coaching

All students pursuing a minor in Athletic Coaching must complete the following 18 semester credit hours:

KIN	1101	Team Sports (repeated for a total of 3 semester credit hours)
KIN	3113	Scientific Principles of Physical Activity
KIN	3013	Theory of Coaching
KIN	3213	First Aid and Injury Management
KIN	4413	Coaching Athletics
KIN	4943	Practicum in Kinesiology

To declare a Minor in Athletic Coaching or to obtain advice, students should consult an advisor in the College of Education and Human Development Advising and Certification Center.

Certificate in Athletic Coaching

All students pursuing a Certificate in Athletic Coaching must complete the following 15 semester credit hours:

KIN	1101	Team Sports (repeated for a total of 3 semester credit hours)
KIN	3013	Theory of Coaching
KIN	3213	First Aid and Injury Management
KIN	4413	Coaching Athletics
KIN	4943	Practicum in Kinesiology

DEPARTMENT OF INTERDISCIPLINARY LEARNING AND TEACHING

Mission Statement

The mission of the Department of Interdisciplinary Learning and Teaching is to:

- Advance the intellectual and professional development of students and faculty through research, critical reflection and dialogue, civic responsibility, and transformative leadership;
- Promote equality and social justice by advocating for educational change and reform; and
- Nurture the personal and professional integrity of all learners.

Vision Statement

To be a model interdisciplinary education program that prepares professionals to work with diverse learners in a global setting.

Core Values

The Department of Interdisciplinary Learning and Teaching will create a context of equitable access that nurtures interdisciplinary learners who embody the following core values:

- **Intellectual:** Demonstrates content, cultural, and technological knowledge, as well as pedagogical-content knowledge;
- **Transformative:** Recognizes and engages in research-based, developmentally, culturally and linguistically responsive practices, that are life-changing for all learners;
- **Inquisitive:** Critically analyzes, produces, and disseminates research;
- **Critically conscious:** Understands the interrelationship among socio-cultural, historical, and political contexts of U.S. education and engages in empowering practices;
- **Ethical:** Exhibits ethical behavior in all their interactions with all populations; and
- **Professional:** Articulates a philosophy and demonstrates a strong professional identity that respects a diverse global society.

Department Honors

The Department of Interdisciplinary Learning and Teaching awards Department Honors to certain outstanding students and provides the opportunity for advanced study under close faculty supervision.

Selection for honors designation is based on the student's academic performance and recommendation by the faculty of the student's major discipline. To be eligible for the program, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. The minimum grade point averages must be maintained for students to receive the approval of the Department Honors Committee and the discipline faculty. Students applying for Department Honors are expected to enroll in the appropriate honors thesis course during their final two semesters. The completed thesis must be approved by the supervising faculty sponsor and another departmental faculty member. Students interested in this program should contact their professors for additional information.

Department Information

The Department of Interdisciplinary Learning and Teaching offers the following degrees and certifications:

I. Bachelor of Applied Arts and Sciences Degree in Infancy and Childhood Studies

II. Bachelor of Arts Degree in Interdisciplinary Studies

A. Degree-Only Concentration

The Bachelor of Arts (B.A.) in Interdisciplinary Studies (IDS) degree-only concentration may be used as preparation for careers in government service or work with youth in a nonteaching capacity, or as an opportunity to prepare for graduate or professional study in areas such as business, counseling, or social work. The minimum number of semester credit hours required for the B.A. in IDS degree-only concentration, including the Core Curriculum requirements, is 120, at least 39 of which must be at the upper-division level. Students selecting this concentration also choose an academic specialization. See the section entitled "Bachelor of Arts Degree in Interdisciplinary Studies (degree-only concentration)" for a listing of the requirements for this degree.

B. Degree with Certification Concentrations

Students who choose the IDS major can also seek teacher certification. The IDS program is designed to give successful students the opportunity to become teachers who understand their own thinking and learning processes and can successfully foster children's conceptual, intellectual, and affective growth. Within the Department of Interdisciplinary Learning and Teaching, IDS majors who select teacher certification can choose from four concentrations: early childhood–grade 6 (EC–6) generalist certification, grades 4–8 language arts/reading/social studies certification, grades 4–8 mathematics/science certification, or EC–12 special education concentration. For additional information regarding requirements for these certifications, students should consult the section of this catalog entitled "IDS Degree Program with Teacher Certification Concentrations." They should also consult with an advisor in the College of Education and Human Development (COEHD) Advising and Certification Center for information regarding certification requirements and for information on admission to the Teacher Certification Program.

IDS majors seeking bilingual or ESL certification for EC–6 and 4–8 should refer to the section of this catalog entitled Department of Bicultural-Bilingual Studies.

Please note that certification programs and requirements are subject to change depending on changes mandated by the state.

III. Secondary Certification

The Department of Interdisciplinary Learning and Teaching offers coursework required for students seeking secondary certification (grades 8–12). Students seeking certification to teach at

the secondary level must obtain a bachelor's degree in the academic area in which they plan to teach. They should consult with an advisor in the college in which their degree is contained. They should also consult with an advisor in the COEHD Advising and Certification Center for information regarding secondary certification requirements and for information on admission to the Teacher Certification Program. For additional information regarding secondary certification requirements, students should consult the section of this catalog entitled "Secondary Certification Programs."

Teacher certification requirements are subject to change; students should consult with an advisor for the most current certification requirements.

Bachelor of Applied Arts and Sciences Degree in Infancy and Childhood Studies

The Bachelor of Applied Arts and Sciences (B.A.A.S.) degree in Infancy and Childhood Studies emphasizes the study of language and reading in early childhood development. The minimum number of semester credit hours for the B.A.A.S. degree in Infancy and Childhood Studies is 120, including Core Curriculum requirement hours. Thirty-nine of the 120 total semester credit hours required for the degree must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Applied Arts and Sciences degree in Infancy and Childhood Studies must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

Degree Requirements

A. 36 semester credit hours in an organized technical program completed at a community college

B. 42 semester credit hours of Core Curriculum courses

C. 33 semester credit hours of required upper-division coursework for the major:

BBL	3143	Children's Literature for Bilingual Learners
		or
RDG	3513	Children's Literature–EC–6
ECE	3133	Programs in Early Childhood
ECE	3143	Child Growth and Development
ECE	3313	Play, Creativity, and Learning
ECE	3603	Language and Literacy Acquisition
ECE	4103	Guidance of Children in Groups
ECE	4123	Family and Community Resources in Early Childhood
ECE	4153	Culturally Appropriate Assessment for Infants and Young Children
HTH	3013	Survey of Human Nutrition
KIN	3123	Early Childhood Development Through Movement
SPE	3603	Introduction to Special Education

D. 6 semester credit hours of support courses in multicultural education selected from the following:

AAS	3013	African American Modes of Expression
BBL	3023	Mexican American Culture
SOC	3413	Sociology of the Mexican American Community
SOC	3503	Sociology of Education

E. 3 semester credit hours of elective coursework

B.A.A.S. in Infancy and Childhood Studies – Recommended Four-Year Academic Plan

Courses	Credit Hours
Coursework to be Completed at a Community College (Associate of Applied Science degree)	
Organized technical program completed at a community college	*36*
Core Curriculum courses	*42*
Coursework to be Completed at UTSA	
YEAR 3	
Fall	
ECE 3143*	3
ECE 3313*	3
ECE 3603*	3
HTH 3013	3
Total semester hours	*12*
Spring	
BBL 3143 or RDG 3513	3
ECE 3133	3
SPE 3603	3
Elective (KIN 2303 recommended)	3
Total semester hours	*12*
YEAR 4	
Fall	
ECE 4103	3
ECE 4123	3
ECE 4153	3
KIN 3123	3
Total semester hours	*12*
Spring	
Two of the following: AAS 3013, BBL 3023, SOC 3413, SOC 3503	6
Total semester hours	*6*

* These courses should be taken concurrently.

Bachelor of Arts Degree in Interdisciplinary Studies (degree-only concentration)

The minimum number of semester credit hours required for this degree is 120, at least 39 of which must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies without teacher certification must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1023 should be used to satisfy the core requirement in Mathematics. IDS 2303 or IDS 2313 is recommended to satisfy the core requirement in Literature. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Science. IDS 2203 or IDS 2213 is recommended to satisfy the core requirement in World Society and Issues.

IDS Degree Requirements (39 semester credit hours)

A. IDS Core Courses (15 semester credit hours):

IDS	2113	Society and Social Issues
IDS	3003	Science and Humanity
IDS	3013	Diversity, Equity, and the Social Sciences
IDS	3123	Culture, Literature, and Fine Arts
IDS	3713	Interdisciplinary Inquiry

B. IDS Specialization Courses (24 semester credit hours):

Social Sciences

IDS	2203	World Civilization to the Fifteenth Century
IDS	2213	World Civilization since the Fifteenth Century

Literature

IDS	2303	World Literature I: Through the Sixteenth Century
IDS	2313	World Literature II: Since the Sixteenth Century

Sciences

IDS	2403	Physical Science
IDS	2413	Earth Systems Science

Mathematics

MAT	1153	Essential Elements in Mathematics I
MAT	1163	Essential Elements in Mathematics II

Area of Specialization (18–24 semester credit hours)

One area of specialization must be selected by the student seeking the IDS major only concentration. This involves a sequence of courses, with a minimum of 18–24 semester credit hours, including 6 hours at the upper-division level, in one specific area or discipline. The area of specialization should not include coursework in the IDS core or specialization requirements. Assistance in selection is available from the COEHD Advising and Certification Center. Students are encouraged to select their area of specialization as early in their program as possible.

Electives (upper-division courses to complete a minimum total of 120 semester credit hours)

Advisors in the COEHD Advising and Certification Center will assist interdisciplinary studies degree-only majors to use their electives to develop a coherent program of study using existing UTSA course offerings.

B.A. in Interdisciplinary Studies, Degree-only Concentration – Recommended Four-Year Academic Plan

Courses	Credit Hours
YEAR 1	
Fall	
MAT 1023 (core)	3
POL 1013 (core)	3
WRC 1013 (core)	3
Natural Sciences Level I core	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
IDS 2113 (core and major)	3
POL 1133 or 1213 (core)	3
WRC 1023 (core)	3
Natural Sciences Level II core	3
U.S. History & Diversity core	3
Total semester hours	*15*
YEAR 2	
Fall	
IDS 2303 (core and major)	3
IDS 3013	3
MAT 1153	3
Economics core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Spring	
IDS 2203 (core and major)	3
IDS 2313	3
IDS 2403 (or IDS 3234)	3
MAT 1163	3
Area of Specialization course	3
Total semester hours	*15*
YEAR 3	
Fall	
IDS 2213	3
IDS 2413 (or IDS 3224)	3
IDS 3123	3
Area of Specialization course	3
Area of Specialization course	3
Total semester hours	*15*

Courses	Credit Hours
Spring	
IDS 3003	3
Area of Specialization course	3
Upper-division elective	3
Upper-division elective	3
Upper-division elective	3
Total semester hours	*15*

YEAR 4

Fall	
IDS 3713	3
Upper-division Area of Specialization course	3
Upper-division elective	3
Upper-division elective	3
Upper-division elective	3
Total semester hours	*15*
Spring	
Upper-division Area of Specialization course	3
Upper-division elective	3
Upper-division elective	3
Upper-division elective	3
Upper-division elective	3
Total semester hours	*15*

IDS DEGREE PROGRAM WITH TEACHER CERTIFICATION CONCENTRATIONS

Programs are subject to change without notice due to changes in the state's certification and/or program approval requirements. Teacher certification programs address standards of the State Board for Educator Certification. Standards can be found at www.tea.state.tx.us.

Bachelor of Arts Degree in Interdisciplinary Studies (Early Childhood–Grade 6 Generalist Certification Concentration)

The minimum number of semester credit hours required for the IDS degree with Early Childhood–Grade 6 generalist certification is 125, at least 39 of which must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies with teacher certification must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1023 should be used to satisfy the core requirement in Mathematics. BIO 1233 and either AST 1033 or PHY 1013 should be used to satisfy the core requirement in Natural Sciences. IDS 2303 or IDS 2313 is recommended to satisfy the core requirement in Literature. HIS 2053 is recommended to satisfy a core requirement in United States History and Diversity. POL 1133 is recommended to satisfy a core requirement in Political Science. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Science. ECO 2003 is recommended to satisfy the core requirement in Economics.

IDS Degree Requirements (29 semester credit hours)

A. IDS Core courses (15 semester credit hours):

IDS	2113	Society and Social Issues
IDS	3003	Science and Humanity
IDS	3013	Diversity, Equity, and the Social Sciences
IDS	3123	Culture, Literature, and Fine Arts
IDS	3713	Interdisciplinary Inquiry

B. IDS Support courses (14 semester credit hours):

IDS	2403	Physical Science
IDS	2413	Earth Systems Science
IDS	3201	Inquiry in Physical Science
IDS	3211	Inquiry in Earth Systems Science
MAT	1153	Essential Elements in Mathematics I
MAT	1163	Essential Elements in Mathematics II

Certification Requirements (36 semester credit hours) (unique courses for each concentration area)

BBL	3403	Cultural and Linguistic Diversity in a Pluralistic Society
ECE	3143	Child Growth and Development
ECE	3313	Play, Creativity, and Learning
ECE	3603	Language and Literacy Acquisition
EDU	2103	Social Foundations for Education in a Diverse U.S. Society
ESL	3023	Second Language Teaching and Learning in EC–6
IDS	2013	Introduction to Learning and Teaching in a Culturally Diverse Society
RDG	3513	Children's Literature–EC–6
RDG	3803	Writing Development and Processes
SPE	3603	Introduction to Special Education

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

RDG	3823	Reading Comprehension–EC–6
RDG	4833	Organizing Reading Programs for Differentiated Instruction–EC–6

Professional Education Requirements (21 semester credit hours)

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

C&I	4303	Approaches to Teaching Social Studies Incorporating Language Arts and Fine Arts EC–6
C&I	4353	Approaches to Teaching Science EC–6

C&I	4403	Approaches to Teaching Mathematics EC–6
C&I	4616	Student Teaching: Early Childhood–Grade 6
ECE	4143	Principles and Practices of Differentiated Education EC–6
ECE	4203	Assessment and Evaluation in EC–6

B.A. in Interdisciplinary Studies, Early Childhood–Grade 6 Generalist Certification Concentration – Recommended Four-Year Academic Plan

Courses	Credit Hours
YEAR 1	
Fall	
BIO 1233 (core)	3
MAT 1023 (core)	3
POL 1013 (core)	3
WRC 1013 (core)	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
AST 1033 or PHY 1013 (core)	3
HIS 2053 (core)	3
IDS 2013	3
IDS 2113 (core and major)	3
WRC 1023 (core)	3
Total semester hours	*15*
Summer	
ECO 2003 (core)	3
POL 1133 (core)	3
World Society & Issues core	3
Total semester hours	*9*
YEAR 2	
Fall	
EDU 2103	3
IDS 2303 or 2313 (core)	3
IDS 3123	3
MAT 1153	3
Visual & Performing Arts core	3
Total semester hours	*15*
Spring	
IDS 2403	3
IDS 3013	3
IDS 3201	1
MAT 1163	3
RDG 3803	3
Total semester hours	*13*
Summer	
IDS 2413	3
IDS 3211	1
SPE 3603	3
Total semester hours	*7*

ADMISSION TO THE TEACHER CERTIFICATION PROGRAM

YEAR 3	
Fall	
IDS 3003	3
ECE 3143*	3
ECE 3313*	3
ECE 3603*	3
RDG 3513	3
Total semester hours	*15*
Spring	
(must be taken Fall or Spring semesters)	
C&I 4353**	3
C&I 4403**	3
ECE 4203**	3
RDG 3823**	3
Total semester hours	*12*
Summer	
BBL 3403	3
IDS 3713	3
Total semester hours	*6*
YEAR 4	
Fall	
(must be taken Fall or Spring semesters)	
C&I 4303†	3
ECE 4143†	3
ESL 3023	3
RDG 4833†	3
Total semester hours	*12*
Spring	
(must be taken Fall or Spring semesters)	
C&I 4616	6
Total semester hours	*6*

* Must be taken concurrently.

** Must be taken concurrently.

† Must be taken concurrently.

Bachelor of Arts Degree in Interdisciplinary Studies (Grades 4–8 Language Arts/Reading/ Social Studies Certification Concentration)

The minimum number of semester credit hours required for the IDS degree with Grades 4–8 Language Arts/Reading/Social Studies certification is 123, at least 39 of which must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies with teacher certification must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1023 should be used to satisfy the core requirement in Mathematics. BIO 1233 is recommended to satisfy the Level One core requirement in Natural Sciences. IDS 2303 or IDS 2313 is recommended to satisfy the core requirement in Literature. HIS 1053 and HIS 2053 are recommended to satisfy the core requirement in United States History and Diversity. POL 1133 is recommended to satisfy a core requirement in Political Science. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Science. ECO 2003 is recommended to satisfy the core requirement in Economics. IDS 2213 is recommended to satisfy the core requirement in World Society and Issues.

IDS Degree Requirements (39 semester credit hours)

A. IDS Core Courses (15 semester credit hours):

IDS	2113	Society and Social Issues
IDS	3003	Science and Humanity
IDS	3013	Diversity, Equity, and the Social Sciences
IDS	3123	Culture, Literature, and Fine Arts
IDS	3713	Interdisciplinary Inquiry

B. IDS Support Courses (24 semester credit hours):

IDS	2083	Technology for Learning and Teaching
IDS	2213	World Civilization since the Fifteenth Century
IDS	2403	Physical Science
IDS	2413	Earth Systems Science
GRG	1013	Fundamentals of Geography
GRG	1023	World Regional Geography
MAT	1153	Essential Elements in Mathematics I
MAT	1163	Essential Elements in Mathematics II

Certification Requirements (30 semester credit hours)

BBL	3403	Cultural and Linguistic Diversity in a Pluralistic Society
EDP	3303	Learning and Development in the Middle School Context (Grades 4–8)
EDU	2103	Social Foundations for Education in a Diverse U.S. Society
ESL	3063	Second Language Acquisition in Early Adolescence
IDS	2013	Introduction to Learning and Teaching in a Culturally Diverse Society
RDG	3803	Writing Development and Processes
SPE	3603	Introduction to Special Education

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

RDG	3523	Reading for Teachers–Grades 4–8
RDG	3533	Reading and Writing across the Disciplines–Grades 4–8
RDG	3633	Literature and Other Texts across the Content Areas–Grades 4–8

Professional Education Requirements (18 semester credit hours)

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

C&I	4533	Language Arts and Social Studies Approaches and Classroom Management Strategies–Grades 4–8
C&I	4543	Approaches to Teaching Social Studies–Grades 4–8
C&I	4553	Approaches to Service-Learning in Social Studies–Grades 4–8
C&I	4626	Student Teaching: Grades 4–8
EDP	4203	Assessment and Evaluation

B.A. in Interdisciplinary Studies, Grades 4–8 Language Arts/Reading/Social Studies Certification Concentration – Recommended Four-Year Academic Plan

Courses	Credit Hours
YEAR 1	
Fall	
BIO 1233 (core)	3
HIS 1053 (core)	3
MAT 1023 (core)	3
WRC 1013 (core)	3
Visual & Performing Arts core	3
Total semester hours	*15*
Spring	
HIS 2053 (core)	3
IDS 2013	3
IDS 2113 (core and major)	3
WRC 1023 (core)	3
Natural Sciences Level II core	3
Total semester hours	*15*
Summer	
IDS 2403 or 3234	3
IDS 2413 or 3224	3
Total semester hours	*6*

Courses	Credit Hours
YEAR 2	
Fall	
EDU 2103	3
IDS 2303 or 2313 (core)	3
IDS 3003	3
MAT 1153	3
POL 1013 (core)	3
Total semester hours	*15*
Spring	
GRG 1023	3
IDS 3013	3
IDS 3123	3
MAT 1163	3
POL 1133 (core)	3
Total semester hours	*15*
Summer	
IDS 2213 (core and major)	3
ECO 2003 (core)	3
Total semester hours	*6*

ADMISSION TO THE TEACHER CERTIFICATION PROGRAM

YEAR 3	
Fall	
ESL 3063	3
GRG 1013	3
IDS 2083	3
IDS 3713	3
RDG 3803	3
Total semester hours	*15*
Spring	
BBL 3403	3
EDP 3303	3
RDG 3523	3
RDG 3633	3
SPE 3603	3
Total semester hours	*15*
Year 4	
Fall	
C&I 4533*	3
C&I 4543*	3
C&I 4553*	3
EDP 4203*	3
RDG 3533*	3
Total semester hours	*15*
Spring	
C&I 4626	6
Total semester hours	*6*

* Must be taken concurrently.

Bachelor of Arts Degree in Interdisciplinary Studies (Grades 4–8 Mathematics/Science Certification Concentration)

The minimum number of semester credit hours required for the IDS degree with Grades 4–8 Mathematics/Science certification is 126 hours, at least 39 of which must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies with teacher certification must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1073 is recommended to satisfy the core requirement in Mathematics. BIO 1233 is recommended to satisfy the Level One core requirement in Natural Sciences. IDS 2303 or IDS 2313 is recommended to satisfy the core requirement in Literature. HIS 1053 and HIS 2053 are recommended to satisfy the core requirement in United States History and Diversity. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Science. ECO 2003 is recommended to satisfy the core requirement in Economics.

IDS Degree Requirements (48 semester credit hours)

A. IDS Core Courses (15 semester credit hours):

IDS	2113	Society and Social Issues
IDS	3003	Science and Humanity
IDS	3013	Diversity, Equity, and the Social Sciences
IDS	3123	Culture, Literature, and Fine Arts
IDS	3713	Interdisciplinary Inquiry

B. IDS Support Courses (33 semester credit hours):

AST	1013	Introduction to Astronomy
AST	1031	Introduction to Astronomy Laboratory
CHE	1103	General Chemistry I
CHE	1121	General Chemistry I Laboratory
IDS	2413	Earth Systems Science
MAT	1093	Precalculus
MAT	1203	Calculus Concepts and Applications (preferred)
		or
MAT	1214	Calculus I
MAT	3103	Data Analysis and Interpretation
MAT	3123	Fundamentals of Geometry
MAT	4013	Graphing Calculator Topics
MAT	4123	History of Mathematics
PHY	1603	Algebra-based Physics I
PHY	1611	Algebra-based Physics I Laboratory

Certification Requirements (21 semester credit hours)

EDP	3303	Learning and Development in the Middle School Context (Grades 4–8)
EDU	2103	Social Foundations for Education in a Diverse U.S. Society

ESL	3063	Second Language Acquisition in Early Adolescence
IDS	2013	Introduction to Learning and Teaching in a Culturally Diverse Society
SPE	3603	Introduction to Special Education

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

RDG	3523	Reading for Teachers–Grades 4–8
RDG	3533	Reading and Writing across the Disciplines–Grades 4–8

Professional Education Requirements (18 semester credit hours)

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

C&I	4433	Approaches to Teaching Science–Grades 4–8
C&I	4443	Approaches to Teaching Mathematics–Grades 4–8
C&I	4603	Mathematics and Science Approaches and Classroom Management Strategies–Grades 4–8
C&I	4626	Student Teaching: Grades 4–8
EDP	4203	Assessment and Evaluation

B.A. in Interdisciplinary Studies, Grades 4–8 Mathematics/Science Certification Concentration – Recommended Four-Year Academic Plan

Courses	Credit Hours
YEAR 1	
Fall	
BIO 1233 (core)	3
HIS 1053 (core)	3
MAT 1073 (core)	3
WRC 1013 (core)	3
Visual & Performing Arts core	3
Total semester hours	*15*
Spring	
HIS 2053 (core)	3
IDS 2013	3
IDS 2113 (core and major)	3
WRC 1023 (core)	3
Natural Sciences Level II core	3
Total semester hours	*15*
Summer	
IDS 2413 (or IDS 3224)	3
POL 1013 (core)	3
Total semester hours	*6*
YEAR 2	
Fall	
AST 1013	3
AST 1031	1
IDS 2303 or 2313 (core)	3
IDS 3003	3
MAT 1093	3
POL 1133 or 1213 (core)	3
Total semester hours	*16*
Spring	
CHE 1103	3
CHE 1121	1
EDP 3303	3
EDU 2103	3
IDS 3013	3
MAT 1203 or 1214	3
Total semester hours	*16*
Summer	
ECO 2003 (core)	3
World Society & Issues core	3
Total semester hours	*6*

ADMISSION TO THE TEACHER CERTIFICATION PROGRAM

YEAR 3	
Fall	
ESL 3063	3
IDS 3123	3
MAT 3103	3
MAT 3123	3
SPE 3603	3
Total semester hours	*15*
Spring	
IDS 3713	3
MAT 4013	3
MAT 4123	3
PHY 1603	3
PHY 1611	1
RDG 3523	3
Total semester hours	*16*
YEAR 4	
Fall	
C&I 4433*	3
C&I 4443*	3
C&I 4603*	3
EDP 4203*	3
RDG 3533*	3
Total semester hours	*15*
Spring	
C&I 4626	6
Total semester hours	*6*

* Must be taken concurrently.

Bachelor of Arts Degree in Interdisciplinary Studies (EC–12 Special Education Certification Concentration)

The minimum number of semester credit hours required for the IDS degree with EC–12 Special Education certification is 120, at least 39 of which must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Interdisciplinary Studies with teacher certification must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1023 or MAT 1043 should be used to satisfy the core requirement in Mathematics. BIO 1233 and either AST 1033 or PHY 1013 should be used to satisfy the core requirement in Natural Sciences. IDS 2303 or IDS 2313 is recommended to satisfy the core requirement in Literature. BBL 2023 is recommended to satisfy the core requirement in Visual and Performing Arts. HIS 2053 is recommended to satisfy a core requirement in United States History and Diversity. POL 1133 is recommended to satisfy a core requirement in Political Science. IDS 2113 should be used to satisfy the core requirement in Social and Behavioral Science. ECO 2003 is recommended to satisfy the core requirement in Economics.

IDS Degree Requirements (21 semester credit hours)

A. IDS Core Courses (15 semester credit hours):

IDS	2113	Society and Social Issues
IDS	3003	Science and Humanity
IDS	3013	Diversity, Equity, and the Social Sciences
IDS	3123	Culture, Literature, and Fine Arts
IDS	3713	Interdisciplinary Inquiry

B. IDS Support Courses (6 semester credit hours):

MAT	1153	Essential Elements in Mathematics I
MAT	1163	Essential Elements in Mathematics II

Certification Requirements (39 semester credit hours)

ECE	3603	Language and Literacy Acquisition
EDU	2103	Social Foundations for Education in a Diverse U.S. Society
IDS	2013	Introduction to Learning and Teaching in a Culturally Diverse Society
RDG	3523	Reading for Teachers–Grades 4–8
RDG	3803	Writing Development and Processes
SPE	3603	Introduction to Special Education
SPE	3693	Special Education Law

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program.

SPE	3623	Assessment: Students with Mild/Moderate Disabilities
SPE	3633	Classroom and Behavior Management for Students with Disabilities
SPE	3673	Assessment: Students with AU and Developmental Disabilities
SPE	3683	Special Education Across the Lifespan
SPE	4683	Communication and Collaboration in Special Education
SPE	4693	Assistive Technology

Professional Education Requirements (21 semester credit hours)

The following courses require an advisor code and are restricted to students who have applied for and been accepted into the Teacher Certification Program. IDS degree requirements and IDS support courses listed above are prerequisite to enrollment in Professional Special Education courses.

SPE	3653	Practicum in Special Education (Introduction)
SPE	4623	Mathematics Instruction for Students with Disabilities
SPE	4643	Instruction for Students with Mild/Moderate Disabilities
SPE	4653	Practicum in Special Education (Advanced)
SPE	4673	Instruction for Students with Autism and Developmental Disabilities

Student Teaching (6 semester credit hours):

C&I	4716	Student Teaching: All Level EC–12

B.A. in Interdisciplinary Studies, EC–12 Special Education Certification Concentration – Recommended Four-Year Academic Plan

Courses	Credit Hours
YEAR 1	
Fall	
BIO 1233 (core)	3
MAT 1023 (core)	3
POL 1013 (core)	3
WRC 1013 (core)	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
AST 1033 or PHY 1013 (core)	3
HIS 2053 (core)	3
IDS 2013	3
IDS 2113 (core and major)	3
WRC 1023 (core)	3
Total semester hours	*15*
Summer	
IDS 2303 or 2313 (core)	3
POL 1133 or 1213 (core)	3
Economics core	3
World Society & Issues core	3
Total semester hours	*12*

Courses	Credit Hours
YEAR 2	
Fall	
BBL 2023 (core)	3
EDU 2103	3
IDS 3123	3
MAT 1153	3
RDG 3803	3
Total semester hours	*15*
Spring	
ECE 3603	3
IDS 3013	3
MAT 1163	3
SPE 3603	3
SPE 3693	3
Total semester hours	*15*
ADMISSION TO THE TEACHER CERTIFICATION PROGRAM	
YEAR 3	
Fall	
RDG 3523	3
SPE 3623*	3
SPE 3653*	3
SPE 4623*	3
SPE 4643*	3
Total semester hours	*15*
Spring	
IDS 3003	3
SPE 3633**	3
SPE 3673**	3
SPE 3683**	3
SPE 4673**	3
Total semester hours	*15*
YEAR 4	
Fall	
IDS 3713	3
SPE 4653†	3
SPE 4683†	3
SPE 4693†	3
Total semester hours	*12*
Spring	
C&I 4716	6
Total semester hours	*6*

* Must be taken concurrently.
** Must be taken concurrently.
† Must be taken concurrently.

SECONDARY CERTIFICATION PROGRAMS

Students seeking certification to teach at the secondary level (grades 8–12) must obtain a bachelor's degree in the academic area in which they plan to teach. They should consult with their advisor in the department in which their degree is contained. They should also consult with an advisor in the COEHD Advising and Certification Center for information regarding secondary certification requirements and admission to the Teacher Certification Program. Requirements for degrees and certificates have been carefully coordinated; however, there may be specific degree requirements that are not required in the certification program, and specific certification requirements that may not be required in the degree program. Certificate program requirements are approved by the State of Texas.

Core Curriculum Requirements: Students should refer to the appropriate section of this catalog for a listing of Core Curriculum requirements for the degree they are seeking.

The number of semester credit hours required for secondary certification is 30. There are additional requirements for students seeking certification in English Language Arts and Reading (ELAR). Students seeking certification in ELAR should consult their certification advisor for information.

Certification Requirements (15 semester credit hours)

(For proper sequencing of these courses, students should consult a certification advisor.)

BBL	3403	Cultural and Linguistic Diversity in a Pluralistic Society
EDP	3203	Learning and Development in the Secondary School Adolescent
EDU	2103	Social Foundations for Education in a Diverse U.S. Society
IDS	2013	Introduction to Learning and Teaching in a Culturally Diverse Society
SPE	3603	Introduction to Special Education

Professional Education and Reading Coursework (9 semester credit hours)

Students must be admitted to the Teacher Certification Program before enrolling in Professional Education and Student Teaching coursework.

C&I	4203	Models of Teaching in the Content Areas of the Secondary School
EDP	4203	Assessment and Evaluation
RDG	3773	Reading and Writing across the Disciplines–Secondary

C&I 4203, EDP 4203, and RDG 3773 are restricted classes. Advisor authorization for these classes will be issued only if all prerequisites have been completed. C&I 4203 is not offered in the Summer Semesters.

Student Teaching Component (6 semester credit hours)

C&I	4646	Student Teaching: Grades 8–12

TEACHER CERTIFICATION PROGRAMS FOR UNDERGRADUATE STUDENTS

The following describes undergraduate programs for students who are pursuing a bachelor's degree concurrently with teacher certification:

- Undergraduate students interested in teaching **pre-kindergarten, kindergarten, and first through sixth grades** will declare a major in Interdisciplinary Studies (IDS) with teacher certification in EC–6 Generalist. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (Early Childhood–Grade 6 Generalist concentration). Degree and certification advising for this program is conducted by COEHD Advising and Certification Center advisors.
- Undergraduate students interested in teaching in **fourth through eighth grades** will declare a major in Interdisciplinary Studies (IDS) with teacher certification in Language Arts/Reading/Social Studies or Mathematics/Science. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (grades 4–8 concentrations). Degree and certification advising for this program is conducted by COEHD Advising and Certification Center advisors.
- Undergraduate students interested in teaching **bilingual pre-kindergarten, kindergarten, and first through sixth grades** will declare a major in Interdisciplinary Studies (IDS) with teacher certification in EC–6 Bilingual Generalist. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (Early Childhood–Grade 6 Bilingual Generalist concentration). Degree and certification advising for this program is conducted by COEHD Advising and Certification Center advisors.
- Undergraduate students interested in teaching **bilingual fourth through eighth grades** will declare a major in Interdisciplinary Studies (IDS) with teacher certification in Bilingual 4–8 Generalist. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (Grades 4–8 Bilingual Generalist concentration). Degree and certification advising for this program is conducted by COEHD Advising and Certification Center advisors.
- Undergraduate students interested in teaching **English as a Second Language in pre-kindergarten through sixth grades** will declare a major in Interdisciplinary Studies (IDS) with teacher certification in English as a Second Language Generalist EC–6. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (Early Childhood–Grade 6 ESL Generalist concentration). Degree and certification advising for this program is conducted by COEHD Advising and Certification Center advisors.
- Undergraduate students interested in teaching **English as a Second Language in fourth through eighth grades** will declare a major in Interdisciplinary Studies (IDS) with teacher certification in English as a Second Language Generalist 4–8 Language Arts/Reading/Social Studies. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (Grades 4–8 ESL concentration). Degree and certification advising for this program is conducted by COEHD Advising and Certification Center advisors.
- Undergraduate students interested in teaching **Special Education** will declare a major in Interdisciplinary Studies (IDS) with certification in EC–12 Special Education. These students should refer to the section of this catalog for the Bachelor of Arts in Interdisciplinary Studies (EC–12 Special Education concentration). Degree and certification advising for this program is conducted by COEHD Advising and Certification Center advisors.
- Undergraduate students interested in teaching **eighth through twelfth grades** will declare a major in the academic area in which they plan to teach. These students will refer to the "Secondary Certification Programs" section of this catalog for information about specialized core curriculum and professional education coursework for which they will enroll concurrently with degree requirements. Students seeking secondary certification are advised to stay in close contact with COEHD Advising and Certification Center advisors.
- Students interested in teaching **physical education in pre-kindergarten through twelfth grades** will declare a major in Kinesiology with a concentration in Physical Education. These students should refer to the "Bachelor of Science Degree in Kinesiology" section of this catalog for degree and certification requirements. Degree and certification advising for this program is conducted by COEHD Advising and Certification Center advisors.
- Students interested in teaching **health in pre-kindergarten through twelfth grades** will declare a major in Health. These students should refer to the "Bachelor of Science Degree in Health" section of this catalog for degree and certification requirements. Degree and certification advising for this program is conducted by COEHD Advising and Certification Center advisors.
- Students interested in teaching **music in pre-kindergarten through twelfth grades** will declare a major in Music with a concentration in Music Studies and will choose either the Instrumental or Choral Music tracks. These students will refer to the "Bachelor of Music with a Music Studies Concentration" section in this catalog for information about degree and certification requirements. Degree advising for this program is conducted by faculty and academic advisors in the Department of Music, while certification advising is conducted by COEHD Advising and Certification Center advisors.
- Students interested in teaching **art in pre-kindergarten through twelfth grades** will declare a major in Art. These students will refer to the "Bachelor of Arts Degree in Art" section of this catalog for information about degree and certification requirements. Degree advising for this program is conducted by faculty and academic advisors in the Department of Art and Art History, while certification advising is conducted by COEHD Advising and Certification Center advisors.

Standards

Certificate programs have been designed to meet the standards for teacher certification set by the State Board for Educator Certification (SBEC). UTSA is approved to recommend individuals for these certificates if the individual has met all of the COEHD Fitness to Teach Policy standards, and has successfully completed all academic requirements for the certificate sought.

The State of Texas utilizes the "approved program" concept in its system of teacher certification. The State:

- establishes the regulations and standards by which teachers are certified (the requirements are independent of college or university degree requirements);
- approves colleges and universities to recommend students for teacher certificates in areas where programs have been found to be in conformity with State standards and are on file with the State; and
- issues the teacher certificate directly to the student, upon recommendation by an approved college or university.

Applying to the Teacher Certification Program

Students who are pursuing an undergraduate degree together with certification and who meet the requirements for admission to the Teacher Certification Program can apply online for admission to the Teacher Certification Program. Requirements and application materials are located on the COEHD Web page (http://education.utsa.edu/). Students must be accepted into the Teacher Certification Program in order to register for courses restricted to teacher certification students.

Applying for the Teacher Certificate

Upon successful completion of the bachelor's degree, the certification program, required examinations, and student teaching (or an approved substitution for student teaching), students must apply for their certificate online at the SBEC Web site: www.tea.state.tx.us.

Additional eligibility requirements for recommendation for the teacher certificate include a 2.50 cumulative grade point average on a 4.00 scale, good standing status at UTSA (not on academic probation), and the recommendation of the College of Education and Human Development (COEHD).

Upon completion of processing by the COEHD Advising and Certification Center and by SBEC, the teacher certificate will be sent directly to the student.

Student Fitness to Teach Policy

The College of Education and Human Development has a responsibility to the educational community to ensure that individuals whom UTSA recommends to the State of Texas for teaching certification are fit to join the teaching profession. All teacher candidates in the UTSA Teacher Certification Program (TCP) are expected to demonstrate that they are prepared to teach children and youth. This preparation results from the combination of successful completion of University coursework and the demonstration of important human characteristics and dispositions that all teachers should possess. Consult the UTSA Handbook of Operating Procedures, Section 5.17, at http://utsa.edu/hop/ or the COEHD Web site at http://education.utsa.edu/ for a copy of the Fitness to Teach Policy. UTSA and the COEHD reserve the right to recommend or not recommend teacher candidates for certification. If, for whatever reason, it is determined that a student does not qualify to be recommended for a teaching certificate, the student may graduate with an IDS only degree upon completion of their degree only requirements.

Criminal Record Check

A criminal background check is a requirement for admission to the Teacher Certification Program. In addition, during each semester in which field-based courses are taken, students will be required to submit to a Criminal Record Check. For further information about criminal record check procedures, consult the COEHD Web page. Criminal record checks are conducted by the individual school districts when field work in schools is a course requirement.

Teaching Certificates for Persons with Criminal Background

In accordance with state law, the State Board for Educator Certification (SBEC) may suspend or revoke a teacher certificate or refuse to issue a teacher certificate for a person who has been convicted of a felony or misdemeanor for a crime that is directly related to the duties and responsibilities of the teaching profession (Texas Occupation Code, Section 53.021).

Certification in States Other than Texas

Once certified in Texas, teachers who move out of state may consult the NASDTEC Interstate Contract Web site at www.nasdtec.org to determine if Texas has reciprocity with the state of relocation. If the state in question requires an out-of-state document to be completed, it should be forwarded to the UTSA Certification Officer in the COEHD Advising and Certification Center.

Students moving out of state before having completed all requirements for teacher certification in Texas will be required to complete a state-approved teacher preparation program once relocated.

Policies

Appeals

- Appeal of Certification Requirements

  Students wishing to appeal admission requirements to the UTSA Teacher Certification Program, prerequisite requirements, and/or coursework requirements should obtain instructions in the COEHD Advising and Certification Center on filing an appeal with the COEHD Appeals Committee. The Appeals Committee is composed of COEHD faculty representatives and meets once per semester. The decision of the Appeals Committee is final.

- Appeal of Nonrecommendation

  If a student does not meet certification requirements, the UTSA Certification Officer notifies the student that he or she will not be recommended for certification. The student has the right to submit an appeal to the COEHD Advising and Certification Center. A COEHD Appeals Committee reviews the appeal materials and makes a recommendation to the Associate Dean for Teacher Education. The Associate Dean for Teacher Education makes a final decision on the appeal and so notifies the student.

Course Substitutions

UTSA certification programs have been carefully designed to meet State Board for Educator Certification (SBEC) standards and to prepare UTSA students to pass the Texas Examinations of Educator Standards (TExES). It is, therefore, in the student's best interest to

follow the approved certification program. **Course substitutions in the teacher education program are granted only in extenuating circumstances and only if appropriate substitutions are available. All requests for substitutions must be filed in writing with the COEHD Advising and Certification Center *before* the individual registers for the course.** Requested course submissions must match the required course in content, level, and grade requirements. Course substitution approvals rest within each department. Department decisions are final.

Restricted Education Courses

Restricted Education courses have strict prerequisites as specified by COEHD faculty. In order to register for a restricted course, a student must apply for advisor authorization. The COEHD Advising and Certification Center accepts applications for advisor authorization from approximately three weeks before registration begins until the registration process is complete. Restricted Professional Development courses are subject to change depending on state-mandated requirements. Students should consult an academic advisor about restricted courses in their program.

Waivers

Individuals who wish to request a waiver of course requirements should first contact the COEHD Advising and Certification Center to determine if the requirement is a UTSA or a State Board for Educator Certification requirement. Individuals who wish to request a waiver of a UTSA requirement must file a written request with the COEHD Advising and Certification Center. Waivers cannot be granted for the requirements mandated by the State Board for Educator Certification.

Requirements for Admission to the Teacher Certification Program

Consult the *UTSA Information Bulletin* (http://utsa.edu/infoguide/) and the COEHD Web site (http://education.utsa.edu/) for additional admission requirements to the UTSA Teacher Certification Program.

Student Teaching

Student teaching is an extremely important component of the certification program. The primary purpose of student teaching is to apply what has been learned in university courses to the professional setting (i.e., an actual classroom). It is expected that the student teaching component of the certification program will be completed through UTSA.

Admission to Student Teaching

Admission to the professional semester of student teaching must be requested by formal application during the semester before the student plans to student teach. A meeting will be held early in the semester to disseminate application information. The deadline for the application for students who plan to student teach in the Fall Semester is February 15. For students planning to student teach in the Spring Semester, the deadline for the application is October 1. Acceptance into the student teaching program is contingent upon completion of the following requirements:

1. Admission to the UTSA Teacher Certification Program; consult the current *UTSA Information Bulletin* (http://utsa.edu/infoguide/) for admission requirements.
2. A 2.5 cumulative grade point average on all college work attempted.
3. Completion of the Professional Education coursework (please refer to course descriptions for specific grade requirements for your program's student teaching course).
4. Students seeking supplementary certification in English as a Second Language should consult an advisor regarding additional course requirements.
5. Presentation of a negative tuberculosis report, as specified by the school district, from a licensed physician, valid at the time of registration for student teaching.
6. Approval of the Director of Student Teaching.

NOTE: The Professional Semester is a full-time commitment. The student teaching semester is 15 weeks with time divided between school campuses and UTSA. A student teacher must follow the same schedule as his or her cooperating teacher in the public schools for a full semester of consecutive, full-day, full-time student teaching; therefore, it is not possible to register for other courses that meet in the daytime hours. Since performance in the student teaching semester is a key factor used by school districts in evaluating an applicant's potential as a teacher, it is recommended that the individual not attempt to work during the student teaching semester. There is no special provision for financial support of student teachers.

Texas Examinations of Educator Standards (TExES)

The Texas Examinations of Educator Standards are state-mandated examinations whose purpose is to ensure that educators possess the necessary content and professional knowledge to teach in Texas public schools. Individuals seeking certification in the State of Texas must pass the required tests before they can be recommended for a teacher certificate and/or endorsement.

TExES tests are criterion-referenced. This means that they are designed to measure an individual's knowledge in relation to an established standard of competence rather than in relation to the performance of other individuals.

The UTSA TExES registration deadline will be three days prior to the date published in the TExES registration bulletin.

Further information on required TExES tests can be obtained in the COEHD Advising and Certification Center, the Office of the TExES Coordinator, or from the UTSA COEHD Web site: http://education.utsa.edu/.

College of Engineering

6

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6. College of Engineering

The College of Engineering offers five Bachelor of Science degree programs in: Biomedical Engineering (BME); Civil Engineering (CE); Computer Engineering (CmpE); Electrical Engineering (EE); and Mechanical Engineering (ME). The three programs of CE, EE and ME are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET). The BME and CmpE are newly established programs. While the latter are not currently ABET accredited, plans are underway for the accreditation of these programs.

The College has excellent laboratory facilities where students receive hands-on instruction by faculty. Computer-aided design (CAD) facilities, including state-of-the-art workstations, are routinely used in all programs. Some classes are taught by adjunct faculty from local industries, giving students the opportunity to interact with engineering professionals engaged in relevant engineering practice.

This engineering education incorporates demonstrable attributes of ABET-2000 criteria as core values. Graduates from the College of Engineering should have excellent opportunities for employment and pursuit of graduate degrees.

College Honors

The College of Engineering designates certain of its outstanding students as Honors students and provides the opportunity for advanced study under close faculty supervision. Selection for the honors designation is based on the student's academic performance and recommendation by a faculty member in the student's major discipline. To be eligible for the program, students must have a minimum UTSA grade point average of 3.25 and a minimum grade point average of 3.25 in their major at UTSA. These minimum averages must be maintained by the student to receive approval of the College Honors Committee. Students applying for College Honors must enroll in EGR 4993 Honors Research during their final two semesters. The completed research paper must be approved by the supervising faculty sponsor and by at least one of the faculty members in the student's major discipline. Students interested in this program should contact a faculty advisor for additional information.

Admission to the College of Engineering

The admission to any undergraduate program in the College of Engineering at UTSA is based on UTSA's undergraduate admission requirements plus the following additional admission criteria for the College of Engineering. A student may be admitted to the College of Engineering in two ways: directly into a major or as a pre-engineering student. A student is admitted directly into a major only if all College of Engineering admission criteria are met. Students interested in pursuing the Biomedical Engineering major must meet additional requirements. See the Department of Biomedical Engineering section for information on admission to the Biomedical Engineering major.

The following are the requirements for direct admission to the College of Engineering majors including Civil Engineering, Computer Engineering, Electrical Engineering, and Mechanical Engineering:

1. Requirements for direct admission to a College of Engineering major for new freshmen or freshman transfers who have been admitted to the University (freshman transfers are transfer students who have earned fewer than 30 hours):

   a. Must have completed MAT 1214 Calculus I, or the equivalent with a grade of "C–" or better, or have met a prerequisite for taking MAT 1214.
   b. i. Must have graduated in the top quartile of their high school graduating class, or
      ii. Must have graduated in the second quartile of their high school class and have a SAT score of at least 1050 or an ACT score of at least 22, or
      iii. Must be granted admission into a College of Engineering major by holistic review by the College of Engineering if not meeting the criteria in i. and ii. above.

   New freshmen and freshman transfers applying for admission to the College of Engineering and not meeting the above criteria will be admitted to the University as pre-engineering majors.

2. Requirements for direct admission to a College of Engineering major for transfer students who have earned 30 or more hours and have been admitted to the University:

   a. Must have completed MAT 1214 Calculus I, or the equivalent with a grade of "C–" or better, or have met a prerequisite for taking MAT 1214.
   b. i. Must have a transfer grade point average of at least 2.50 and a grade point average of at least 2.50 in all mathematics, sciences, and engineering coursework, or
      ii. Must have a transfer grade point average of at least 2.00 and a grade point average of at least 2.00 in all mathematics, sciences, and engineering coursework, and be granted admission to the College of Engineering major by holistic review by the College of Engineering.

   Transfer students not admitted directly to a College of Engineering major may be granted admission to the pre-engineering major by holistic review by the College of Engineering.

   Transfer students not admitted directly to a College of Engineering major, nor granted admission as a pre-engineering major must select a different major at the University.

Pre-engineering majors who have at least a 2.00 grade point average in each of the three components of the Three Calculation Grade Point Average (see below) may apply for admission to a College of Engineering major after completing MAT 1214 with a grade of "C–" or better. Admission of a pre-engineering major into a College of Engineering major will be determined by a holistic review by the College of Engineering.

All transfer students to the College of Engineering must complete at least 42 credit hours from their required major courses at UTSA before graduation.

Placement as an Engineering Major

Incoming students who meet all admission criteria either directly from high school or with transfer credits will be admitted into one of the following majors: Biomedical Engineering (BME), Civil Engineering (CE), Computer Engineering (CmpE), Electrical Engineering (EE), or Mechanical Engineering (ME). All students admitted to engineering majors should follow their major curriculum. A student who meets the requirements for entering into a major within the College of Engineering, but is unsure of which major to pursue, may be admitted as an undeclared engineering student. If a student cannot meet all the admission criteria for an engineering major, he or she may be admitted as a pre-engineering student.

Placement as a Pre-Engineering Student

Students admitted as pre-engineering students should take the deficient mathematics courses along with required University Core Curriculum courses. Their academic performance will be monitored regularly by the College of Engineering. The three-attempt limit will be enforced (see section, Three-Attempt Limit for the College of Engineering). Students can apply to their department for advancement into an engineering major when conditions specified by the department are met. One of the required conditions for placement into an engineering major is a minimum grade point average of 2.00 in each of the three components of the Three-Calculation Grade Point Average. A student placed as a pre-engineering student may not enroll in any College of Engineering courses except for 1000-level BME, CE, EE, ME, and EGR courses until they have been certified by a department in the College of Engineering as meeting the qualifications for placement as an engineering major.

Placement as an Upper-Level Engineering Major

An engineering major may not take upper-division courses within the College of Engineering until he or she has been placed by the College of Engineering as an Upper-Level Engineering Major. A student who has successfully completed all of the lower-division mathematics, science, and engineering courses required for his or her engineering major may apply to the department of the major for approval to be certified as an Upper-Level Engineering Major. In order to be approved for placement as an Upper-Level Engineering Major, a student is required to demonstrate satisfactory academic performance by having a minimum overall grade point average of 2.00 in all lower-division (1000- and 2000-level) courses that count toward the degree and obtaining a grade point average of 2.25 in all lower-division mathematics, science, and engineering courses. An official degree plan is filed upon receiving approval to become an Upper-Level Engineering Major.

"C–" Grade Rule

A grade of "D+" or lower in any science or mathematics course required for an engineering degree or any other course that is a prerequisite to a required Biomedical Engineering (BME), Civil Engineering (CE), Electrical Engineering (EE), Mechanical Engineering (ME), or Engineering (EGR) course indicates unsatisfactory preparation for further engineering education. Any such course in which a grade of "D+," "D," "D–," "F," or "W" is received must be repeated before enrolling in any course for which it is a prerequisite. This requirement is subject to the three-attempt limit.

Three-Attempt Limit for the College of Engineering

A student unable to achieve the minimum required grade in a required engineering course or in a prerequisite to a required engineering course within three enrollments (attempts) shall be required to change his or her major to a field outside of the College of Engineering. Enrollment in a course for a period of time sufficient for assignment of a grade, including a grade of "W," is considered an attempt.

Three-Calculation Grade Point Average

The three grade point average calculations employ only the grades received in courses that are applicable to the engineering degree being sought. The grade point averages used in the three-calculation grade point average (GPA) are:

- overall grade point average of all courses (Overall GPA),
- grade point average of all mathematics, science, and engineering courses, and
- grade point average of all courses taken in the discipline of the major subject (Major GPA).

Cooperative Education in Engineering Program

The Cooperative Education in Engineering Program formally integrates University studies with institutionally supervised work experiences at cooperating organizations. Students participating in this program alternate periods of study at the University with periods of employment in industry. This combination of experiences enhances the student's knowledge, personal development, and preparation for a professional career. Participants register at the University each semester. During the work periods, students register for the 1-semester-credit-hour Engineering Co-op course. At the end of each work period, students submit reports covering the period. These reports are the basis of the student's grades in the course. The cooperative education work periods also provide students with a source of income to help pay for their college expenses.

Students may petition to apply 3 semester credit hours of Engineering Co-op as a technical elective toward their degree in engineering. They must petition prior to co-op activities.

To qualify for the Cooperative Education in Engineering Program, a student must: have declared a major in the College of Engineering; have completed at least 36 semester credit hours of major and support work, including 7 hours of college-level calculus and 8 hours of college-level physics; and have a minimum cumulative grade point average of 2.50 and a minimum grade point average of 2.50 in their College of Engineering courses. Students are advised that many co-op employers require cumulative grade point averages higher than 2.50, and some require a minimum cumulative grade point average of 3.0. Transfer students may participate in the program after completing at least one semester at the University.

For more information and to apply to the Cooperative Education in Engineering Program, students should contact the College of Engineering Advising Center.

Degree Requirements Common to All Engineering Programs

Entering students should enroll in COR 1203, Freshman Seminar (Society and Technology), as early as possible, preferably during their first semester at UTSA. The purpose of this course is to help students to understand the influence of engineering and technology on society, be introduced to different engineering disciplines, and learn about skills necessary to become successful in their college education. During their first semester, students should specify their interest in a specific engineering program by selecting biomedical, civil, computer, electrical, or mechanical engineering as a major. Undecided engineering students should select a major closest to their area of interest (refer to the following program descriptions). Students may obtain additional information about each program from the College office or a faculty advisor in the appropriate discipline.

Prerequisites for Biomedical Engineering (BME), Civil Engineering (CE), Computer Engineering (CmpE), Electrical Engineering (EE), Mechanical Engineering (ME), and Engineering (EGR) courses must be completed with a grade of "C–" or better. A minimum grade of "C–" is required for all science and mathematics courses required in the Engineering programs. Students must satisfy the University's Core Curriculum and ABET accreditation requirements. Recommended degree plans and current ABET requirements may be obtained from the College of Engineering.

Requirements common to all engineering degree programs follow.

I. Core Curriculum requirements

Students seeking the Bachelor of Science degree in any engineering field must fulfill University Core Curriculum requirements in the same manner as other students at UTSA.

CHE 1103, MAT 1214, and PHY 1903 (also listed under section II, General Engineering requirements) may be used to satisfy the Core Curriculum requirements for Mathematics and Natural Sciences.

II. General Engineering requirements

All degree-seeking candidates in engineering must complete the following 22 semester credit hours:

CHE	1103	General Chemistry I
EGR	2323	Applied Engineering Analysis I
MAT	1214	Calculus I
MAT	1224	Calculus II
PHY	1903, 1911	Engineering Physics I and Laboratory
PHY	1923, 1931	Engineering Physics II and Laboratory

DEPARTMENT OF BIOMEDICAL ENGINEERING

Bachelor of Science Degree in Biomedical Engineering

A Bachelor of Science (B.S.) degree in Biomedical Engineering (BME) at UTSA is an interdisciplinary program that combines engineering principles, approaches, and methodologies with biological, chemical and physical sciences in order to define and solve problems in medicine. Students will be trained in the fundamentals of science and engineering and are expected to be able to apply this knowledge to investigate fundamental biomedical engineering questions associated with complex living systems as well as with the diagnosis and treatment of human diseases. A broad understanding of sciences and engineering principles is provided in the first two years of the program, with students having the option to choose one concentration as an in-depth focus area of study in the last two years of the program. Critical thinking and innovative design skills are integrated throughout the program to aid students in developing solutions and in solving biomedical engineering-related problems. Design projects throughout the program and Senior BME Design courses provide students the opportunity to integrate their design, critical thinking and communication skills with the scientific and engineering knowledge they acquired throughout the Biomedical Engineering program. The regulations for this degree comply with the general University regulations (refer to Chapter 1, Bachelor's Degree Regulations).

Admission Requirements. A first-time, full-time freshman admitted as a biomedical engineering major must meet the minimum admission criteria of the College of Engineering. These criteria are:

- Students must meet all UTSA admission requirements;
- Students must have credit for MAT 1214 Calculus I or have completed all necessary prerequisites to enroll in MAT 1214 Calculus I (through a mathematics placement test or credit for MAT 1093 Precalculus or an equivalent).
- Students must:
  1. have graduated in the top quartile of their high school graduation class, or
  2. have graduated in the second quartile of their high school class and have a SAT score of at least 1050 (Reading and Math) or a ACT composite score of at least 22, or,
  3. be granted admission into a College of Engineering major by holistic review by the College of Engineering if not meeting the criteria in 1 and 2 above.

All students applying for admission to the Biomedical Engineering program must submit the following supplemental documents to the Department of Biomedical Engineering:

- two (2) letters of recommendation,
- a copy of the transcript, and
- a statement of their interests, professional career goals and how the Biomedical Engineering program will help achieve those goals.

All transfer students must meet the aforementioned minimum admission requirements for the College of Engineering and the Biomedical Engineering program. Transfer students must also meet the minimum Good Academic Standing Requirements for a Biomedical Engineering Major (see below) in order to be considered for admission to the Biomedical Engineering program. Additionally, transfer students should also have completed at least 15 semester credit hours of mathematics, science, or engineering courses, and have an overall grade point average of a 3.0 or better.

Admissions to the biomedical engineering program will be competitive; meeting the aforementioned requirements does not guarantee admission to the program. Admission will be restricted only to the most qualified applicants.

Good Academic Standing Requirements for the Biomedical Engineering Major. All students must be in good academic standing in order to remain in the Biomedical Engineering program. The minimum requirements that a student must satisfy in order to remain in good standing as a biomedical engineering major are stated below:

- A cumulative grade point average (GPA) of at least 3.0 for all coursework (Cumulative GPA will be calculated on all courses, including previously attempted or repeated courses).
- An average GPA of at least 3.0 for all science, mathematics and engineering coursework (GPA will be calculated on all courses, including previously attempted or repeated courses).

Students who fail to meet the above requirements but have a minimum cumulative GPA of 2.5 or above will be placed on programmatic probation in the following semester. Students who fail to maintain good academic standing after a semester of programmatic probation or who has a cumulative GPA below 2.5 will be deemed to be not in good academic standing as a biomedical engineering major and will be removed from the program.

Education Objectives. The objectives of this program are founded on the belief that engineering principles and understanding of biological and physical sciences are critical to the investigation of fundamental bioengineering questions associated with complex living systems as well as with the diagnosis and treatment of human diseases. As such, the specific educational objectives of this program are that our graduates will be expected to be able to:

- successfully apply their biomedical engineering knowledge and training skills to address and solve biomedical and biotechnology problems;
- develop critical thinking, problem solving, and innovative design skills needed to be successful biomedical engineers;
- develop effective communication skills needed in their biomedical engineering careers.

The minimum number of semester credit hours required for this degree is 125, at least 39 of which must be at the upper-division level. All candidates for this degree must fulfill the Core Curriculum requirements, the General Engineering requirements, and the degree requirements, listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Biomedical Engineering must fulfill the University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both major requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for the degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1214 may be used to satisfy the core requirement in Mathematics, as well as one of the General Engineering Requirements. BIO 1404 and PHY 1903 may be used to satisfy the core requirement in Natural Sciences, as well as one of the General Engineering Requirements. COR 1203 should be used to satisfy the core requirement in Social and Behavioral Science.

General Engineering Requirements

All degree-seeking candidates in engineering must complete the following 22 semester credit hours, as well as the Core Curriculum requirements and major requirements:

CHE	1103	General Chemistry I
EGR	2323	Applied Engineering Analysis I
MAT	1214	Calculus I
MAT	1224	Calculus II
PHY	1903, 1911	Engineering Physics I and Laboratory
PHY	1923, 1931	Engineering Physics II and Laboratory

Biomedical Engineering Requirements

A. Core Biomedical Engineering Requirements. All students majoring in Biomedical Engineering are required to complete 36 semester credit hours in the following Core Biomedical Engineering courses.

BME	1002	Introduction to Biomedical Engineering
BME	2103	Physiology for Biomedical Engineering
BME	2114	Cell Biology for Biomedical Engineering
BME	2203	Biomechanics I
BME	2211	Biomedical Engineering Laboratory I
BME	2403	Biomaterials I
BME	3013	Clinical Internship in Biomedical Engineering
BME	3023	Biomedical Engineering Technology and Product Development
BME	3303	Bioinstrumentation
BME	3311	Biomedical Engineering Laboratory II
BME	3703	Biotransport Phenomena
BME	3711	Biomedical Engineering Laboratory III
BME	4903	Senior BME Design I
BME	4913	Senior BME Design II

B. Other Required Courses. All students majoring in Biomedical Engineering are required to complete the following 6 semester credit hours:

CHE	1113	General Chemistry II
STA	2303	Applied Probability and Statistics for Engineering

C. Biomedical Engineering Electives. A minimum of 15 semester credit hours is required to fulfill this requirement. 9 semester credit hours of Biomedical Engineering elective courses must be selected from one of the following concentrations. The remaining semester credit hours must be selected from the other concentrations to satisfy the Biomedical Engineering Electives requirement. Up to 6 semester credit hours of graduate-level biomedical engineering courses may be used to satisfy the Biomedical Engineering electives, with the approval of the advisor, instructor, Graduate Program Director, and Department Chair.

Biomechanics Concentration

BME 3203 Biomechanics II
BME 4203 Biomechanics III
BME 4293 Topics in Biomechanics
BME 4703 Biomedical Engineering Thermodynamics
BME 4803 Fundamental Computational Bioengineering

Biomaterials, Cellular, and Tissue Engineering Concentration

BME 3403 Biomaterials II
BME 3413 Biocompatibility of Materials
BME 4403 Molecular Techniques for Cell-Biomaterials Interactions
BME 4423 Tissue Engineering
BME 4483 Topics in Biomaterials
BME 4493 Topics in Tissue Engineering
BME 4713 Cellular Engineering
BME 4793 Topics in Cellular Engineering

Biomedical Imaging and Nanobiotechnology Concentration

BME 3503 Fundamentals of Nanobiotechnology
BME 4503 Biosensors
BME 4603 Biophotonics
BME 4613 Biomedical Imaging

D. Technical Electives. A minimum of 9 semester credit hours of Technical Electives must be completed by all students. Depending on interest, students should select appropriate courses in sciences and engineering in order to enhance their basic engineering and scientific training. Examples of Technical Electives are:

Engineering Courses

EE 2213 Electric Circuits and Electronics
EE 2423 Network Theory
EE 3533 Random Signals and Noise
EGR 2103 Statics
ME 3293 Thermodynamics I
ME 3813 Mechanics of Solids

Science Courses

BIO 1413 Biosciences II
BIO 2313 Genetics
BIO 3913 Molecular Biology
CHE 2603 Organic Chemistry I
CHE 2612 Organic Chemistry I Laboratory
CHE 3643 Organic Chemistry II
CHE 4303 Biochemistry

B.S. in Biomedical Engineering – Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
BIO 1404 (core and major)	4
CHE 1103	3
COR 1203 (core)	3
MAT 1214 (core and major)	4
WRC 1013 (core)	3
Total semester hours	*17*
Second Semester	
BME 1002	2
CHE 1113	3
MAT 1224	4
PHY 1903 (core and major)	3
PHY 1911	1
WRC 1023 (core)	3
Total semester hours	*16*
Third Semester	
BME 2103	3
EGR 2323	3
PHY 1923	3
PHY 1931	1
STA 2303	3
Literature core	3
Total semester hours	*16*
Fourth Semester	
BME 2114	4
BME 2203	3
BME 2211	1
BME 2403	3
POL 1013 (core)	3
Total semester hours	*14*
Fifth Semester	
BME 3013	3
BME 3303	3
BME 3311	1
POL 1133 or 1213 (core)	3
Technical elective	3
Upper-division BME elective	3
Total semester hours	*16*

Courses	Credit Hours
Sixth Semester	
BME 3023	3
BME 3703	3
BME 3711	1
Technical elective	3
Technical elective	3
Upper-division BME elective	3
Total semester hours Total	*16*
Seventh Semester	
BME 4903	3
Upper-division BME elective	3
Upper-division BME elective	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Eighth Semester	
BME 4913	3
Economics core	3
Upper-division BME elective	3
U.S. History & Diversity core	3
World Society & Issues core	3
Total semester hours	*15*

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

Bachelor of Science Degree in Civil Engineering

The Department of Civil and Environmental Engineering offers an ABET-accredited bachelor's program that, in terms of graduating class size, ranks in the 80th percentile nation-wide. The Department is committed to providing a learning environment which encourages discovery and advancement for the betterment of its students and the community. Through its research, public service, and instructional programs, the Department seeks to serve the needs of San Antonio and South Texas by providing educational and research opportunities contributing to the technological and economic development of the region.

Civil Engineering Educational Objectives

The American Society of Civil Engineers (ASCE) defines Civil Engineering as "The profession in which a knowledge of the mathematical and physical sciences gained by study, experience, and practice is applied with judgment to develop ways to utilize, economically, the materials and forces of nature for the progressive well-being of humanity in creating, improving, and protecting the environment; in providing facilities for community living, industry, and transportation; and in providing structures for the use of humanity."

The faculty of the Department of Civil and Environmental Engineering has established a specific set of program objectives to support the mission and the goals of the Department and to meet the requirements of ABET accreditation under the Criteria for Accrediting Engineering Programs (2009). The educational objectives of the Civil Engineering undergraduate program are to produce Bachelor of Science graduates who:

- meet the expectations of their employers,
- will endeavor to become licensed professional engineers, and
- are able to pursue graduate studies, if so desired.

Civil Engineering students must first complete the University Core Curriculum requirements and the Department's General Engineering requirements. The University Core Curriculum requirements consist of 42 semester credit hours and provide the scientific foundation required for advancing successfully to the General Engineering requirement courses. They include courses in Communications, Mathematics, Natural Sciences, Social and Behavioral Sciences, Humanities and World Issues.

The General Engineering requirements consist of 25 semester credit hours geared toward advancing the technical abilities and skills necessary to meet the educational objectives of the College of Engineering. They include a number of the Core Curriculum required courses, namely MAT 1214 Calculus I, CHE 1103 General Chemistry I, PHY 1903 Engineering Physics I, and PHY 1911 Engineering Physics I Laboratory. Students are also encouraged to take ECO 2013 Introductory Macroeconomics or ECO 2023 Introductory Microeconomics. In addition, General Engineering requirements include MAT 1224 Calculus II, PHY 1923 Engineering

Physics II, PHY 1931 Engineering Physics II Laboratory, EGR 2323 Applied Engineering Analysis I, and EGR 3713 Engineering Economic Analysis.

Subsequently, students need to take 70 additional semester credit hours of Civil Engineering courses. Courses for 64 of these credit hours are required, while the remaining 6 credit hours can be selected from among CE elective courses. The elective courses allow some specialization in one of the traditional Civil Engineering areas, namely, Environmental Geotechnical, Hydraulics, Structures and Transportation. Senior Civil Engineering students, in their last semester of study, are required to take the Fundamentals of Engineering (FE) Examination as administered by the National Council of Examiners for Engineering and Surveying (www.ncees.org). Graduates are encouraged to further pursue life-long learning and obtain their Professional Engineering license.

Design is integrated throughout the curriculum starting with a freshman introductory course, CE 1301 Introduction to Civil Engineering, and ending with the senior capstone Civil Engineering Design course CE 4813. Design components are contained in most required engineering topics courses. These include CE 3213 Reinforced Concrete Design, CE 3233 Steel Design, CE 3413 Geotechnical Engineering and Applications, CE 3633 Water and Wastewater Treatment, CE 4123 Highway Engineering, and CE 4603 Water Resources Engineering. Design is also included in many of the technical elective courses. The design experience culminates in the senior capstone design course, CE 4813 Civil Engineering Design. The capstone design project is multidisciplinary in that it involves three or more civil engineering areas and draws upon most prior coursework. The course involves teamwork, both oral and written presentations, a final design report, and a formal presentation.

The minimum number of semester credit hours required for this degree is 128, including at least 39 at the upper-division level. All candidates for this degree must fulfill the Core Curriculum requirements, the General Engineering requirements, and the Civil Engineering degree requirements prior to graduation.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Civil Engineering must fulfill the University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both major requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for the degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1214 may be used to satisfy the core requirement in Mathematics, as well as one of the General Engineering requirements. CHE 1103 and PHY 1903 may be used to satisfy the core requirement in Natural Sciences, as well as two of the General Engineering requirements. COR 1203 should be used to satisfy the core requirement in Social and Behavioral Science. ECO 2013 or ECO 2023 is recommended to satisfy the core requirement in Economics.

General Engineering Requirements

In addition to the Core Curriculum requirements, all degree-seeking Civil Engineering students must complete the following 25 semester credit hours:

CHE	1103	General Chemistry I
EGR	2323	Applied Engineering Analysis I
EGR	3713	Engineering Economic Analysis
MAT	1214	Calculus I
MAT	1224	Calculus II
PHY	1903, 1911	Engineering Physics I and Laboratory
PHY	1923, 1931	Engineering Physics II and Laboratory

Civil Engineering Degree Requirements

In addition to the Core Curriculum and the General Engineering requirements described above, all degree-seeking candidates in Civil Engineering must complete the following 70 semester credit hours:

A. 64 semester credit hours of required courses:

CE	1301	Introduction to Civil Engineering
CE	1403	Engineering Communication
CE	2103	Civil Engineering Measurements
CE	2633	Environmental Engineering
CE	3103	Mechanics of Solids
CE	3113	Structural Analysis
CE	3173	Numerical Methods
CE	3213	Reinforced Concrete Design
CE	3233	Steel Design
CE	3243	Properties and Behavior of Engineering Materials
CE	3413	Geotechnical Engineering and Applications
CE	3543	Project Design and Construction Management
CE	3603	Fluid Mechanics
CE	3633	Water and Wastewater Treatment
CE	4123	Highway Engineering
CE	4313	Computer-Aided Design in Civil Engineering
CE	4603	Water Resources Engineering
CE	4813	Civil Engineering Design
EGR	2103	Statics
EGR	2513	Dynamics
GEO	4023	Engineering Geology
STA	2303	Applied Probability and Statistics for Engineers

B. 6 semester credit hours of Civil Engineering technical electives must be selected from the list below. Alternatively, students with a grade point average of 3.0 or higher may choose to satisfy this requirement by taking graduate courses offered by the Department of Civil and Environmental Engineering.

CE	3723	Applied Hydrology
CE	4013	Civil Engineering Systems Analysis
CE	4103	Advanced Steel Design
CE	4133	Advanced Reinforced Concrete
CE	4153	Prestressed Concrete
CE	4253	Introduction to Masonry and Timber Design
CE	4293	Geographic Information Systems (GIS)

CE	4303	Hydrometeorology
CE	4403	Advanced Characterization of Highway Materials
CE	4453	Transportation Engineering
CE	4463	Foundation Engineering
CE	4613	Environmental Chemistry
CE	4723	Hydraulic Systems Design

B.S. in Civil Engineering – Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
CE 1301	1
CE 1403	3
CHE 1103 (core and major)	3
COR 1203 (core)	3
MAT 1214 (core and major)	4
WRC 1013 (core)	3
Total semester hours	*17*
Second Semester	
CE 2103	3
MAT 1224	4
PHY 1903 (core and major)	3
PHY 1911	1
WRC 1023 (core)	3
U.S. History & Diversity core	3
Total semester hours	*17*
Third Semester	
EGR 2103	3
EGR 2323	3
PHY 1923	3
PHY 1931	1
STA 2303	3
U.S. History & Diversity core	3
Total semester hours	*16*
Fourth Semester	
CE 2633	3
CE 3103	3
CE 3173	3
ECO 2013 or 2023 (core)	3
EGR 2513	3
Total semester hours	*15*
Fifth Semester	
CE 3113	3
CE 3213	3
CE 3243	3
CE 3603	3
EGR 3713	3
POL 1013 (core)	3
Total semester hours	*18*

Courses	Credit Hours
Sixth Semester	
CE 3233	3
CE 3413	3
CE 3633	3
GEO 4023	3
POL 1133 or 1213 (core)	3
Total semester hours	*15*
Seventh Semester	
CE 3543	3
CE 4123	3
CE 4313	3
CE 4603	3
Literature core	3
Total semester hours	*15*
Eighth Semester	
CE 4813	3
CE Technical elective	3
CE Technical elective	3
Visual & Performing Arts core	3
World Society & Issues core	3
Total semester hours	*15*

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

The Department of Electrical and Computer Engineering (ECE) offers a Bachelor of Science degree in Electrical Engineering (B.S. EE) and a Bachelor of Science degree in Computer Engineering (B.S. CmpE). Individuals enrolling in these degree programs are given an opportunity to develop a strong background in the engineering sciences and to learn the analysis, design, and synthesis tools necessary to function well as active participants in many traditional, new, and emerging areas of technology. The Cooperative Education in Engineering Program formally integrates students' University studies with institutionally supervised work experiences at cooperating organizations. The majority of students receive engineering-related experience during pursuit of their bachelor's degree. The ECE department continues to be recognized locally and nationally for the quality of its undergraduate programs. As a result, ECE graduates continue to find high-paying jobs or are accepted into graduate schools nationwide.

Program Educational Objectives

The educational objectives of the Electrical and Computer Engineering programs are that our graduates will:

A. contribute their technical knowledge to better their lives,
B. assume positions of leadership and responsibility in their careers,
C. pursue graduate and professional studies, and
D. conduct themselves in a professional manner that meets or exceeds the expectations of their employers.

Meeting Program Objectives

To meet the program objectives, the curriculum for the Bachelor of Science degree in Electrical Engineering and the curriculum for the Bachelor of Science degree in Computer Engineering are organized into a flexible 126-semester-credit-hour structure that provides high-quality education in the fundamentals of engineering, in addition to a thorough coverage of the major specialties within electrical engineering and computer engineering. For electrical engineering students, a selection of technical electives is provided to allow in-depth concentration in selected areas such as: communication; computer; digital signal processing (DSP); electronic materials and devices; systems and control; and electric power engineering. For students seeking the Bachelor of Science degree in Computer Engineering, the selection of technical electives are from different areas within computer engineering such as: digital system design, computer architecture, VLSI design, engineering programming languages and embedded systems.

Department faculty of outstanding quality work in concert to provide and to evolve a curriculum that is challenging to students, with depth in engineering science, design orientation, and modern laboratory experience. The curriculum objectives are accomplished via a three-tiered curriculum structure comprised of the lower-division core (the first two years), the upper-division core (concentrated primarily in the third year), and the senior-level electives, each of which are briefly described below.

Lower-Division Core

The lower-division core provides students with a diverse range of courses over a broad base of basic technical and specialized courses in mathematics, physics, and chemistry; computer hardware and software fundamentals; electric circuit fundamentals and electrical engineering laboratory experience; statics and dynamics; and communication skills, humanities, and social sciences.

Upper-Division Core

The upper-division core for electrical engineering and computer engineering provides students with a basic education in the fundamentals of electrical and computer engineering.

The upper-division core in electrical engineering includes: fundamentals of circuits (3 semester credit hours), controls (3 semester credit hours), electromagnetics (3 semester credit hours), electronics (6 semester credit hours), electronic devices (3 semester credit hours), and probability and random processes (3 semester credit hours). Many of these fundamental courses include the use of modern software tools for design and analysis. These fundamentals are supplemented with one hands-on laboratory course (3 semester credit hours). Written and technical communication is further emphasized in the laboratory course.

The upper-division core in computer engineering includes: fundamentals of circuits (3 semester credit hours), C++ and data structures (3 semester credit hours), microcomputer systems (3 semester credit hours), electronics (6 semester credit hours), electronic devices (3 semester credit hours), and probability and random processes (3 semester credit hours). Many of these fundamental courses include the use of modern software tools for design and analysis. These fundamentals are supplemented with one hands-on laboratory course (3 semester credit hours). Written and technical communication is further emphasized in the laboratory course.

Senior-Level Electives

In the senior year, electrical engineering students enroll in five technical electives (15 semester credit hours), a senior laboratory course (3 semester credit hours), and the capstone design sequence (4 semester credit hours). The technical elective courses involve modern software tools. The capstone sequence not only provides a major design experience but also emphasizes teamwork, proposal development, communication skills, and professional and ethical responsibility. Electrical engineering students are required to choose one of the six technical areas and to select a minimum of three technical electives (9 semester credit hours) from that single area. The remaining two technical electives (6 semester credit hours) may be selected either from the same area or from the other five areas, including one course at the graduate level and/or 3 semester credit hours from an engineering cooperative program. Computer engineering students are required to choose five technical electives from a list of approved technical electives for Bachelor of Science in Computer Engineering. The engineering cooperative program provides an opportunity for students to obtain practical experience by enrolling in three semesters (1 semester credit hour each semester) and working in an approved industry. Students who want to pursue graduate studies are encouraged to enroll in a graduate class during their last year, which will be counted as one of the remaining technical electives.

Engineering Design Experience

Design process in electrical engineering and in computer engineering is emphasized throughout all four years. Engineering design is distributed throughout the curriculum starting from the second semester in EE 2513 Logic Design. During their junior and senior years, students take five technical elective courses which all have design components. During the seventh semester, students also take EE 4113 Electrical Engineering Laboratory II, where they must design larger-level circuits. Modern software tools usage, design and analysis, and formal written report writing are integrated components of several of the electrical and computer engineering courses. EE 3113 Electrical Engineering Laboratory I and EE 4113 Electrical Engineering Laboratory II emphasize hands-on experiments using basic to advanced capability instruments and formal written, as well as oral, reports. In EE 4811 Electrical Engineering Design I and EE 4813 Electrical Engineering Design II students are required to design, implement, test, demonstrate and make an oral presentation on an electronic system.

Other courses with design emphasis that electrical engineering students take include: EE 3213 Electromagnetic Engineering, EE 3313 Electronic Circuits I, EE 3323 Electronic Devices, EE 3413 Analysis and Design of Control Systems, EE 3463 Microcomputer Systems I, EE 4313 Electronic Circuits II, and EE 4323 Dielectric and Optoelectronic Engineering Laboratory.

Other courses with design emphasis that computer engineering students take include: EE 3313 Electronic Circuits I, EE 3323 Electronic Devices, EE 3463 Microcomputer Systems I, EE 3563 Digital Systems Design and EE 4513 Introduction to VLSI Design.

Bachelor of Science Degree in Electrical Engineering

The Bachelor of Science degree in Electrical Engineering has concentrations in Communication; Computer Engineering; Digital Signal Processing (DSP); Electronic Materials and Devices; Systems and Control; and Electric Power Engineering. The program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET). The Bachelor of Science degree in Electrical Engineering offers students the opportunity to prepare for careers in areas associated with electronics and microelectronics, digital systems, communications, digital signal and image processing, controls and robotics, computer-aided design (CAD), instrumentation, bioengineering, electric power engineering, and other traditional and emerging areas of high technology. Through the proper selection of elective courses (at least three technical elective courses must be selected from a single technical area) to augment required courses, successful students will develop a specialization pertinent to many of these areas that may lead to productive employment in the public or private sector with electronics companies, high-technology industries, and government agencies. The program will also provide the opportunity for students to develop an understanding of fundamentals and current issues important for future years of learning through such activities as graduate school, distance education, professional training, and membership in professional societies.

The minimum number of semester credit hours required for this degree is 126, at least 39 of which must be at the upper-division level. At least 42 of the required electrical engineering credits must be taken at UTSA. All candidates for this degree must fulfill the Core Curriculum requirements, the General Engineering requirements, and the Electrical Engineering requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Electrical Engineering must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both major requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1214 may be used to satisfy the core requirement in Mathematics, as well as one of the General Engineering requirements. CHE 1103 and PHY 1903 may be used to satisfy the core requirement in Natural Sciences, as well as two of the General Engineering requirements. COR 1203 should be used to satisfy the core requirement in Social and Behavioral Science. ECO 2023 should be used to satisfy the core requirement in Economics.

General Engineering Requirements

All degree-seeking candidates in engineering must complete the following 22 semester credit hours, as well as the Core Curriculum requirements and major requirements:

CHE	1103	General Chemistry I
EGR	2323	Applied Engineering Analysis I
MAT	1214	Calculus I
MAT	1224	Calculus II
PHY	1903, 1911	Engineering Physics I and Laboratory
PHY	1923, 1931	Engineering Physics II and Laboratory

Electrical Engineering Degree Requirements

All degree-seeking candidates in Electrical Engineering must complete the following semester credit hours, as well as the Core Curriculum requirements and General Engineering requirements:

A. 56 semester credit hours of required courses:

1. 50 semester credit hours of electrical engineering courses:

EE	1323	Introduction to Electrical Engineering Profession
EE	2423	Network Theory
EE	2511	Logic Design Laboratory
EE	2513	Logic Design
EE	3113	Electrical Engineering Laboratory I
EE	3213	Electromagnetic Engineering
EE	3313	Electronic Circuits I
EE	3323	Electronic Devices
EE	3413	Analysis and Design of Control Systems
EE	3423	Signals and Systems I
EE	3463	Microcomputer Systems I
EE	3523	Signals and Systems II
EE	4113	Electrical Engineering Laboratory II
EE	4313	Electronic Circuits II

EE	4811	Electrical Engineering Design I
EE	4813	Electrical Engineering Design II
EGR	2213	Statics and Dynamics
EGR	3323	Applied Engineering Analysis II

2. 6 semester credit hours of supporting courses:

CS	2073	Computer Programming with Engineering Applications
EE	3533	Random Signals and Noise
		or
STA	3533	Probability and Random Processes

B. 15 semester credit hours of electrical engineering elective courses. At least three courses (9 hours) from one of the following concentrations must be selected:
(Topics offered under EE 4953 Special Studies in Electrical Engineering may be approved as technical electives in the relevant concentration.)

Communication Concentration

EE	4613	Communication Systems
EE	4653	Digital Communications
EE	4673	Data Communication and Networks
EE	4683	Wireless Communications
EE	4693	Fiber Optic Communications

Computer Engineering Concentration

EE	3223	C++ and Data Structures
		or
CS	3733	Operating Systems
EE	3563	Digital Systems Design
EE	4243	Computer Organization and Architecture
EE	4513	Introduction to VLSI Design
EE	4553	VLSI Testing
EE	4583	Microcomputer Systems II

DSP Concentration

EE	4453	Selected Topics in Digital Signal Processing
EE	4623	Digital Filtering
EE	4643	Digital Signal Processing
EE	4663	Digital Image Processing

Electronic Materials and Devices Concentration

EE	3513	Electromechanical Systems
EE	4323	Dielectric and Optoelectronic Engineering Laboratory
EE	4353	Introduction to Modern Optics
EE	4523	Introduction to Micro and Nanotechnology
EE	4533	Principles of Microfabrication
EE	4543	Advanced Topics in Micro and Nanotechnology

Systems and Control Concentration

EE	3513	Electromechanical Systems
EE	4443	Discrete-Time and Computer-Controlled Systems
EE	4723	Intelligent Robotics
EE	4733	Intelligent Control
EE	4743	Embedded Control Systems

Electric Power Engineering Concentration

EE	3513	Electromechanical Systems
EE	4123	Power Engineering Laboratory
EE	4753	Analysis of Power Systems
EE	4763	Power Electronics
EE	4773	Electric Drives

B.S. in Electrical Engineering – Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
EE 1323	3
CHE 1103 (core and major)	3
COR 1203 (core)	3
MAT 1214 (core and major)	4
WRC 1013 (core)	3
Total semester hours	*16*
Second Semester	
EE 2511	1
EE 2513	3
CS 2073	3
MAT 1224	4
PHY 1903 (core and major)	3
PHY 1911	1
WRC 1023 (core)	3
Total semester hours	*18*
Third Semester	
EE 2423	3
EGR 2213	3
EGR 2323	3
PHY 1923	3
PHY 1931	1
U.S. History & Diversity core	3
Total semester hours	*16*
Fourth Semester	
EE 3313	3
EE 3423	3
EE 3463	3
EGR 3323	3
U.S. History & Diversity core	3
Total semester hours	*15*

Courses	Credit Hours
Fifth Semester	
EE 3113	3
EE 3323	3
EE 3523	3
EE 4313	3
Literature core	3
Total semester hours	*15*
Sixth Semester	
EE 3213	3
EE 3413	3
EE 3533 or STA 3533	3
EE Technical elective	3
POL 1013 (core)	3
Total semester hours	*15*
Seventh Semester	
EE 4113	3
EE 4811	1
EE Technical elective	3
EE Technical elective	3
POL 1133 or 1213 (core)	3
Visual & Performing Arts core	3
Total semester hours	*16*
Eighth Semester	
ECO 2023 (core)	3
EE 4813	3
EE Technical elective	3
EE Technical elective	3
World Society & Issues core	3
Total semester hours	*15*

Bachelor of Science Degree in Computer Engineering

The Bachelor of Science degree in Computer Engineering gives the students the opportunity to acquire broad engineering skills and knowledge to enable them to design and implement computer and digital systems. The discipline of computer engineering includes topics such as logic design; digital systems design; discrete mathematics; computer organization; embedded systems design requiring assembly programming of microprocessors, high-level programming and interfacing of processors to other circuits; high-level digital design languages (HDL) and Field Programmable Gate Arrays (FPGA's); Very Large Scale Integrated (VLSI) circuit design; and fundamental electrical engineering, mathematics, and science. While the B.S. in CmpE is not currently ABET accredited as it is a newly established program, plans are underway for the accreditation of the program at the earliest opportunity.

The minimum number of semester credit hours required for this degree is 126, at least 39 of which must be at the upper-division level. At least 42 of the required computer engineering credits must be taken at UTSA. All candidates for this degree must fulfill the Core Curriculum requirements, the General Engineering requirements, and the Computer Engineering requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Computer Engineering must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both major requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1214 may be used to satisfy the core requirement in Mathematics, as well as one of the General Engineering requirements. CHE 1103 and PHY 1903 may be used to satisfy the core requirement in Natural Sciences, as well as two of the General Engineering requirements. COR 1203 should be used to satisfy the core requirement in Social and Behavioral Science. ECO 2023 should be used to satisfy the core requirement in Economics.

General Engineering Requirements

All degree-seeking candidates in engineering must complete the following 22 semester credit hours, as well as the Core Curriculum requirements and major requirements:

CHE	1103	General Chemistry I
EGR	2323	Applied Engineering Analysis I
MAT	1214	Calculus I
MAT	1224	Calculus II
PHY	1903, 1911	Engineering Physics I and Laboratory
PHY	1923, 1931	Engineering Physics II and Laboratory

Computer Engineering Degree Requirements

All degree-seeking candidates in Computer Engineering must complete the following semester credit hours, as well as the Core Curriculum requirements and General Engineering requirements:

A. 56 semester credit hours of required courses:

1. 47 semester credit hours of electrical and computer engineering courses:

EE	1323	Introduction to Electrical Engineering Profession
EE	2423	Network Theory
EE	2511	Logic Design Laboratory
EE	2513	Logic Design
EE	3113	Electrical Engineering Laboratory I
EE	3223	C++ and Data Structures
EE	3313	Electronic Circuits I
EE	3323	Electronic Devices
EE	3423	Signals and Systems I
EE	3463	Microcomputer Systems I
EE	3563	Digital Systems Design

EE	4113	Electrical Engineering Laboratory II
EE	4243	Computer Organization and Architecture
EE	4513	Introduction to VLSI Design
EE	4811	Electrical Engineering Design I
EE	4813	Electrical Engineering Design II
EGR	3323	Applied Engineering Analysis II

2. 9 semester credit hours of supporting courses:

CS	2073	Computer Programming with Engineering Applications
CS	2233	Discrete Mathematical Structures
EE	3533	Random Signals and Noise or
STA	3533	Probability and Random Processes

B. 15 semester credit hours of computer engineering elective courses from the following list:

CS	3733	Operating Systems
CS	3773	Software Engineering
CS	4353	Unix and Network Security
EE	4553	VLSI Testing
EE	4563	FPGA-Based System Design
EE	4583	Microcomputer Systems II
EE	4593	Embedded System Design
EE	4643	Digital Signal Processing
EE	4663	Digital Image Processing
EE	4953	Special Studies in Electrical Engineering (Computer Engineering related topics only)

B.S. in Computer Engineering – Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
EE 1323	3
CHE 1103 (core and major)	3
COR 1203 (core)	3
MAT 1214 (core and major)	4
WRC 1013 (core)	3
Total semester hours	*16*
Second Semester	
EE 2511	1
EE 2513	3
CS 2073	3
MAT 1224	4
PHY 1903 (core and major)	3
PHY 1911	1
WRC 1023 (core)	3
Total semester hours	*18*
Third Semester	
CS 2233	3
EE 2423	3
EGR 2323	3
PHY 1923	3
PHY 1931	1
U.S. History & Diversity core	3
Total semester hours	*16*
Fourth Semester	
EE 3313	3
EE 3423	3
EE 3463	3
EGR 3323	3
U.S. History & Diversity core	3
Total semester hours	*15*
Fifth Semester	
EE 3113	3
EE 3223	3
EE 3323	3
EE 3563	3
Literature core	3
Total semester hours	*15*
Sixth Semester	
EE 3533 or STA 3533	3
EE 4243	3
EE 4513	3
POL 1013 (core)	3
Technical elective	3
Total semester hours	*15*
Seventh Semester	
EE 4113	3
EE 4811	1
POL 1133 or 1213 (core)	3
Technical elective	3
Technical elective	3
Visual & Performing Arts core	3
Total semester hours	*16*
Eighth Semester	
ECO 2023 (core)	3
EE 4813	3
Technical elective	3
Technical elective	3
World Society & Issues core	3
Total semester hours	*15*

DEPARTMENT OF MECHANICAL ENGINEERING

The Department of Mechanical Engineering offers a Bachelor of Science degree in Mechanical Engineering (ME). The program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET). Individuals enrolling in this degree program are given the opportunity to develop a strong background in Engineering Science and to learn the analysis, design, and synthesis tools necessary to contribute in traditional and emerging areas of technology.

The department has excellent laboratory facilities where students receive hands-on instruction from faculty members. Computer-aided design (CAD) facilities, including state-of-the-art workstations, are routinely used. Some classes are taught by adjunct faculty from local industries, giving students the opportunity to interact with engineering professionals engaged in relevant engineering practice.

Because of the broad engineering training in this program, graduates may find employment in nearly all industries, including companies or government agencies associated with aerospace, automotive, energy, petroleum, manufacturing, and research.

Bachelor of Science Degree in Mechanical Engineering

The Bachelor of Science degree in Mechanical Engineering offers students the opportunity to prepare for careers in traditional, new, and emerging technologies related to the practice of Mechanical Engineering, which is a versatile and broadly-based engineering discipline. Mathematics and basic sciences, such as physics and chemistry, form the foundation of mechanical engineering, which requires an understanding of diverse subject areas, such as solid and fluid mechanics, thermal sciences, mechanical design, structures, material selection, manufacturing processes and systems, mechanical systems and control, and instrumentation.

The five areas of concentration within the Mechanical Engineering program are:

1. General Mechanical Engineering
2. Energy, Thermal and Fluid Systems
3. Manufacturing Engineering and Systems
4. Mechanical Systems and Design
5. Mechanics and Materials

The Mechanical Engineering curriculum provides education and basic engineering training in all specializations through the required coursework. Students may develop a degree of specialization and depth in one of the concentration areas through the selection of technical elective courses. The design experience is integrated throughout the program. Development of open-ended, problem-solving skills is a part of many mechanical engineering courses. Design projects with formal report writing are included in many courses. In addition, a substantial portion of all technical elective courses is devoted to the design of systems and components. A capstone design sequence at the senior level provides an opportunity to apply and integrate the knowledge gained throughout the curriculum to the development of an instructor-approved project.

The laboratory requirements are designed to provide hands-on experience in basic measurement and instrumentation equipment and the application of classroom theory. Students may receive additional hands-on experiences by selecting technical elective courses with laboratory components.

Opportunities exist for students to participate in research and design projects. All students are eligible to participate in undergraduate research, through the independent study courses. Students also have an opportunity to participate in an approved co-op program and may receive up to 3 semester credit hours for their experience.

Educational Objectives

The program educational objectives of the Bachelor of Science degree in the Mechanical Engineering program are to provide graduates with opportunities to:

1. Have engineering careers in industry or government and/or pursue advanced graduate or professional degrees.
2. Apply their engineering skills to their careers.
3. Continue to advance their knowledge, communication and leadership skills by using technology, continuing education, solving problems, and serving in technical or professional societies.
4. Apply their understanding of societal, environmental, and ethical issues to their professional activities.

The minimum number of semester credit hours required for this degree is 128, at least 39 of which must be at the upper-division level. All candidates for this degree must fulfill the Core Curriculum requirements, the General Engineering requirements, and the degree requirements, listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Mechanical Engineering must fulfill the University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both major requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for the degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1214 may be used to satisfy the core requirement in Mathematics, as well as one of the General Engineering requirements. CHE 1103 and PHY 1903 may be used to satisfy the core requirement in Natural Sciences, as well as two of the General Engineering requirements. COR 1203 should be used to satisfy the core requirement in Social and Behavioral Science.

General Engineering Requirements

Students seeking the Bachelor of Science degree in Mechanical Engineering must complete the following 22 semester credit hours:

CHE	1103	General Chemistry I
EGR	2323	Applied Engineering Analysis I
MAT	1214	Calculus I
MAT	1224	Calculus II
PHY	1903, 1911	Engineering Physics I and Laboratory
PHY	1923, 1931	Engineering Physics II and Laboratory

Degree Requirements

Students seeking the Bachelor of Science degree in Mechanical Engineering must complete the following semester credit hours, as well as the Core Curriculum requirements and General Engineering requirements:

A. 61 semester credit hours of required foundation and general mechanical engineering courses:

EE	2213	Electric Circuits and Electronics
EGR	2103	Statics
EGR	2513	Dynamics
EGR	3323	Applied Engineering Analysis II
ME	1302	Mechanical Engineering Practice
ME	1402	Mechanical Engineering Practice and Graphics
ME	2173	Numerical Methods
ME	3113	Measurements and Instrumentation
ME	3244	Materials Engineering and Laboratory
ME	3263	Manufacturing Engineering
ME	3293	Thermodynamics I
ME	3543	Dynamic Systems and Control
ME	3663	Fluid Mechanics
ME	3813	Mechanics of Solids
ME	3823	Machine Element Design I
ME	4293	Thermodynamics II
ME	4313	Heat Transfer
ME	4543	Mechatronics
ME	4733	Mechanical Engineering Laboratory
ME	4812	Senior Design I
ME	4813	Senior Design II

B. 9 semester credit hours of Mechanical Engineering elective courses. Students are encouraged to choose courses from a specific concentration listed below.

C. 3 semester credit hours of approved mathematics or basic science elective courses. A list of acceptable courses is available in the College of Engineering Undergraduate Advising Center.

Concentration: Energy, Thermal and Fluid Systems

ME	4183	Compressible Flow and Propulsion Systems
ME	4323	Thermal Systems Design
ME	4343	Heating, Air Conditioning, and Refrigeration Design
ME	4593	Alternative Energy Sources
ME	4613	Power Plant System Design
ME	4623	Internal Combustion Engines
ME	4663	Fluid Systems Design

Concentration: Manufacturing Engineering and Systems

ME	4563	Computer Integrated Manufacturing
ME	4573	Facilities Planning and Design
ME	4583	Enterprise Process Engineering

Concentration: Mechanical Systems and Design

ME	3323	Mechanical Vibration
ME	4133	CAD/CAE
ME	4433	Machine Element Design II
ME	4553	Automotive Vehicle Dynamics
ME	4673	Mechanical Systems Design
ME	4723	Reliability and Quality Control in Engineering Design
ME	4773	Fundamentals of Robotics

Concentration: Mechanics and Materials

ME	4243	Intermediate Materials Engineering
ME	4603	Finite Element Analysis
ME	4963	Mechanical Engineering Applications to Biomedical Systems

Concentration: General Mechanical Engineering

Courses selected from any of the previous areas
EGR 4993 Honors Research*
ME 4953 Special Studies in Mechanical Engineering*
Graduate Courses in Mechanical Engineering†

* With prior approval, these courses may be used as a technical elective.

† Graduate courses require approval. Forms are available in the College of Engineering Undergraduate Advising Center.

B.S. in Mechanical Engineering – Recommended Four-Year Academic Plan

Courses	Credit Hours
First Semester	
CHE 1103 (core and major)	3
COR 1203 (core)	3
MAT 1214 (core and major)	4
ME 1302	2
WRC 1013 (core)	3
Total semester hours	*15*
Second Semester	
MAT 1224	4
ME 1402	2
PHY 1903 (core and major)	3
PHY 1911	1
WRC 1023 (core)	3
U.S. History & Diversity core	3
Total semester hours	*16*
Third Semester	
EGR 2103	3
EGR 2323	3
ME 2173	3
PHY 1923	3
PHY 1931	1
U.S. History & Diversity core	3
Total semester hours	*16*

Courses	Credit Hours
Fourth Semester	
EGR 2513	3
EGR 3323	3
ME 3244	4
ME 3293	3
Math/Science elective	3
Total semester hours	*16*
Fifth Semester	
EE 2213	3
ME 3543	3
ME 3663	3
ME 3813	3
ME 4293	3
Literature core	3
Total semester hours	*18*
Sixth Semester	
ME 3113	3
ME 3263	3
ME 3823	3
ME 4313	3
POL 1013 (core)	3
Visual & Performing Arts core	3
Total semester hours	*18*
Seventh Semester	
ME 4543	3
ME 4733	3
ME 4812	2
ME Technical elective	3
POL 1133 or 1213 (core)	3
Total semester hours	*14*
Eighth Semester	
ME 4813	3
ME Technical elective	3
ME Technical elective	3
Economics core	3
World Society & Issues core	3
Total semester hours	*15*

College of

Liberal and Fine Arts

7

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7. College of Liberal and Fine Arts

Vision Statement

The College of Liberal and Fine Arts will become an internationally recognized college of liberal and fine arts providing the core intellectual experience that prepares students for their role as responsible citizens in a free society.

Mission Statement

The College of Liberal and Fine Arts will meet the needs of the diverse population of Texas through quality research and creative work, exemplary teaching, and professional contributions to the community.

General Information

The College of Liberal and Fine Arts (COLFA) includes 11 departments in the fine arts, humanities, and social sciences. COLFA is the largest UTSA college. It is responsible for one-third of all the instruction delivered at the University and serves all University students through the Core Curriculum. In addition, the College offers 18 major degree programs and 28 minors. One-fourth of all UTSA undergraduate degree recipients annually are COLFA majors.

COLFA faculty are among the University's leading researchers, recognized regionally, nationally, and internationally. Faculty and their students play a major role in improving the community through the creation and application of new knowledge in numerous artistic, cultural, business, and public policy settings.

The COLFA Signature Experience

Every undergraduate degree program in the College includes a capstone experience that involves the practical application of liberal and fine arts training in a professional setting. The Signature Experience may be pursued through an organized class assignment, independent study research project, internship, performance, public presentation, or other activity as deemed appropriate to the discipline. Students should consult with their advisor or department chair to learn about Signature Experience opportunities in their major.

The COLFA Oral History Awards Program

The COLFA Oral History Awards Program provides a unique opportunity for select students to conduct original oral history research. Students registered for independent study or approved coursework involving oral history in any of the COLFA disciplines may apply for financial support to conduct research. To learn more about the program or to apply, students should see their advisor or the department chair of their major.

DEPARTMENT OF ANTHROPOLOGY

The Department of Anthropology offers a Bachelor of Arts degree in Anthropology and minors in Anthropology and American Indian Studies. Honors may also be earned in Anthropology.

Department Honors

The Department of Anthropology awards Department Honors to certain of its outstanding students and provides the opportunity for advanced study under close faculty supervision.

Selection of students for honors designation is based on the student's academic performance and recommendation by the faculty in the student's major discipline. To be eligible for the program, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in their major at UTSA. The minimum grade point averages must be maintained for students to receive the approval of the Department Honors Committee and the discipline faculty. Students applying for Department Honors are expected to enroll in the appropriate honors thesis courses during their final two semesters. The completed thesis must be approved by the supervising faculty sponsor and another departmental faculty member.

Students interested in this program should contact their faculty advisors for additional information.

Bachelor of Arts Degree in Anthropology

The minimum number of semester credit hours required for this degree, including Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

As part of the College of Liberal and Fine Arts Signature Experience, which seeks to offer students opportunities to apply ideas and knowledge in real-world settings, the Department of Anthropology encourages students to take advantage of internships, independent studies, or service learning as part of their undergraduate program of study. Internships are arranged through the Department Chair and are designed to provide students with experiences at a wide variety of institutions in the region, including the Department's Center for Archaeological Research and the UTSA Institute of Texan Cultures. Independent studies are arranged in consultation with Anthropology faculty and may include research on areas not normally covered by organized coursework, work associated with a professor's research, or a student's independent research project. Service Learning is offered through the UTSA Student Activities Office and focuses on activities designed around civic engagements that address or meet community needs.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Anthropology must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

ANT 2033 or ANT 2043 may be used to satisfy the Level One core requirement in Natural Sciences as well as a major requirement. ANT 1013 should be used to satisfy the core requirement in Social and Behavioral Science. ANT 2053 or ANT 2063 may be used to satisfy the core requirement in World Society and Issues as well as a major requirement.

Degree Requirements

A. 39 semester credit hours in the major, 27 of which must be at the upper-division level:

   1. 12 semester credit hours of required courses:

      ANT 2033 Introduction to Physical Anthropology
      ANT 2043 Introduction to Archaeology
      ANT 2053 Introduction to Cultural Anthropology
      ANT 2063 Language, Thought, and Culture

   2. 9 upper-division semester credit hours chosen in consultation with the student's advisor:

      3 semester credit hours in archaeology
      3 semester credit hours in cultural anthropology
      3 semester credit hours in physical anthropology

   3. 18 additional upper-division semester credit hours of anthropology electives, excluding ANT 4913 Independent Study, chosen in consultation with the student's advisor.

B. 9 semester credit hours of upper-division coursework from another discipline that supports the study of anthropology. The support area must form a cohesive program of study and must be chosen in consultation with the student's faculty advisor after completion of 12 semester credit hours of anthropology. Recommended areas for support work include, but are not limited to, foreign languages, statistics, computer science, earth sciences, environmental sciences, and social sciences. The student should file a statement of intent and the list of courses to be taken in the support area with the undergraduate advisor for Anthropology in the College of Liberal and Fine Arts Advising Center.

C. 30 semester credit hours of electives

Course Sequence Guide for B.A. Degree in Anthropology

This course sequence guide is designed to assist students in completing their UTSA undergraduate Anthropology degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Anthropology – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
ANT 1013 (core)	3
HIS 1043, 1053, or 2053 (core)	3
WRC 1013 (core)	3
Free elective	3
Visual & Performing Arts core	3
Total semester hours	*15*
Spring	
ANT 2033 (core and major)	3
HIS 1043, 1053, or 2053 (core)	3
WRC 1023 (core)	3
Free elective	3
Mathematics core	3
Total semester hours	*15*
SOPHOMORE YEAR	
Fall	
ANT 2043	3
POL 1013 (core)	3
Free elective	3
Literature core	3
Natural Sciences Level II core	3
Total semester hours	*15*
Spring	
ANT 2053 (core and major)	3
ECO 2003, 2013, or 2023 (core)	3
POL 1133 or 1213 (core)	3
Free elective	3
Upper-division Physical Anthropology	3
Total semester hours	*15*

Courses	Credit Hours
JUNIOR YEAR	
Fall	
ANT 2063	3
Upper-division ANT elective	3
Upper-division Cultural Anthropology	3
Upper-division free elective	3
Upper-division support work	3
Total semester hours	*15*
Spring	
Upper-division ANT elective	3
Upper-division ANT elective	3
Upper-division ANT elective	3
Upper-division Archaeology	3
Upper division support work	3
Total semester hours	*15*
SENIOR YEAR	
Fall	
Free elective	3
Free elective	3
Free elective	3
Upper-division ANT elective	3
Upper-division support work	3
Total semester hours	*15*
Spring	
Free elective	3
Free elective	3
Free elective (to meet 120 hour minimum)	3
Free elective (to meet 120 hour minimum)	3
Upper-division ANT elective	3
Total semester hours	*15*

Minor in Anthropology

All students pursuing a Minor in Anthropology must complete 18 semester credit hours.

A. 9 semester credit hours of courses selected from the following:

ANT 2033 Introduction to Physical Anthropology
ANT 2043 Introduction to Archaeology
ANT 2053 Introduction to Cultural Anthropology
ANT 2063 Language, Thought, and Culture

B. 9 additional upper-division semester credit hours:

3 semester credit hours in archaeology
3 semester credit hours in cultural anthropology
3 semester credit hours in physical anthropology

To declare a Minor in Anthropology, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult the undergraduate advisor for Anthropology in the College of Liberal and Fine Arts Advising Center.

Minor in American Indian Studies

Eighteen (18) semester credit hours are required for the Minor in American Indian Studies, at least 9 semester credit hours of which must be drawn from outside the student's major. Hours are selected from the following:

AHC 3423 Arts of Ancient America
ANT 3153 Indians of the Great Plains
ANT 3203 Native North Americans
ANT 3253 The Archeology of South America
ANT 3263 Archaeology of North America
ANT 3273 Civilizations of Mexico
ANT 3303 Nature and Culture in Greater Amazonia
ANT 3363 Indians of Mesoamerica
ANT 3833 Indians of Texas
ANT 4113 Archaeology of Texas
ANT 4123 Archaeology of the American Southwest
HIS 3063 The Spanish Borderlands, 1521–1821
HIS 3073 The Mexican Borderlands/The American Southwest
HIS 3083 History of the American West
HIS 3113 North American Indian Histories
HIS 3403 Pre-Hispanic and Colonial Latin America

To declare a Minor in American Indian Studies, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult the undergraduate advisor for Anthropology in the College of Liberal and Fine Arts Advising Center.

DEPARTMENT OF ART AND ART HISTORY

The Department of Art and Art History offers a Bachelor of Arts in Art, a Bachelor of Fine Arts in Art, and a Bachelor of Arts in Art History and Criticism, as well as a Minor in Art History and Criticism. These degree programs subscribe to the College of Liberal and Fine Arts Signature Experience through practical experience achieved in the following courses: ART 4833, ART 4983, and AHC 4933. UTSA is an accredited institutional member of the National Association of Schools of Art and Design.

Bachelor of Arts Degree in Art

The Bachelor of Arts (B.A.) degree in Art is awarded upon the completion of 120 hours, of which 42 hours are Core Curriculum requirements. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

The B.A. degree in Art recognizes the successful completion of a program of study which includes foundation study, some specialization in studio art practices and a broad foundation in art history. The curriculum aims primarily toward breadth of experience in the context of a liberal arts education rather than professional specialization.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Art must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

AHC 1113, AHC 1123, or AHC 1133 may be used to satisfy the core requirement in Visual and Performing Arts as well as a major requirement.

Major Requirements

A. 21 semester credit hours of required lower-division art and art history and criticism foundation courses:

AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350*
AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750*
AHC 1133	Survey of Modern Art*
ART 1003	Two Dimensional Foundations*
ART 1013	Three Dimensional Foundations*
ART 1213	Drawing I*
ART 1223	Drawing II*

* A grade of "C–" or better must be earned in these courses to satisfy the prerequisites for subsequent courses in the Art major.

B. 9 semester credit hours chosen from the following:

ART 2113	Painting: Basic
ART 2223	New Media: Basic
ART 2313	Photography: Basic
ART 2413	Printmaking: Basic
ART 2613	Sculpture: Basic
ART 2713	Ceramics: Basic

C. 12 additional semester credit hours of upper-division art course electives (the ART course prefix must precede course numbers for all classes used to fulfill these degree requirements)

D. 6 semester credit hours of upper-division art history and criticism course electives. The AHC course prefix must precede course numbers for all classes used to fulfill these degree requirements, with the exception that students may substitute a specific course in the philosophy of art or a humanities course with a strong art history component for one (3 semester credit hours) upper-division art history course with consent of the undergraduate advisor for art programs.

E. 33 semester credit hours of free electives, at least 21 hours of which must be upper-division, including as many semesters of a modern language or Latin as are necessary for the completion of the second semester course of that language. Within the scope of these electives, students may take courses for all-level teacher certification, 24 semester credit hours of professional education courses (including 6 hours of student teaching and 3 hours in a state-mandated reading course): for specific required courses, consult the College of Education and Human Development Advising and Certification Center.

Note: For the B.A. degree in Art, the major grade point average is calculated using only ART and AHC courses.

Course Sequence Guide for B.A. Degree in Art

This course sequence guide is designed to assist students in completing their UTSA undergraduate Art degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Art – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
AHC 1113* (core and major)	3
ART 1003*	3
ART 1213*	3
WRC 1013 (core)	3
Mathematics core	3
Total semester hours	*15*
Spring	
AHC 1123*	3
ART 1013*	3
ART 1223*	3
WRC 1023 (core)	3
Natural Sciences Level I core	3
Total semester hours	*15*

Courses	Credit Hours
SOPHOMORE YEAR	
Fall	
AHC 1133*	3
POL 1013 (core)	3
Foreign Language (semester I)	3 or 4
Lower-division Studio ART Basic	3
Natural Sciences Level II core	3
Total semester hours	*15 or 16*
Spring	
ECO 2003, 2013, or 2023 (core)	3
POL 1133 or 1213 (core)	3
Foreign Language (semester II)	3 or 4
Lower-division Studio ART Basic	3
Upper-division AHC elective	3
Total semester hours	*15 or 16*
JUNIOR YEAR	
Fall	
HIS 1043, 1053 or 2053 (core)	3
Lower-division Studio ART Basic	3
Upper-division AHC elective	3
Upper-division free elective	3
World Society & Issues core	3
Total semester hours	*15*
Spring	
HIS 1043, 1053 or 2053 (core)	3
Social & Behavioral Science core	3
Upper-division free elective	3
Upper-division free elective	3
Upper-division Studio ART elective	3
Total semester hours	*15*
SENIOR YEAR	
Fall	
Literature core	3
Upper-division free elective	3
Upper-division free elective	3
Upper-division Studio ART elective	3
Upper-division Studio ART elective	3
Total semester hours	*15*
Spring	
Free elective	3
Free elective	3
Upper-division free elective	3
Upper-division free elective	3
Upper-division Studio ART elective	3
Total semester hours	*15*

* Must be completed with a grade of "C–" or better.

Bachelor of Fine Arts Degree in Art

The Bachelor of Fine Arts (B.F.A.) degree in Art is awarded in recognition of successful completion of prolonged and intensive studio coursework with supportive studies in art history and criticism. The final two years of study include a specialized area of study in one of the following: ceramics, new media, painting, photography, printmaking, or sculpture. The University is an accredited institutional member of the National Association of Schools of Art and Design.

Transfer students who wish to receive credit for upper-division art courses taken at another institution should present a portfolio of work to the department before the registration period. This portfolio should consist of 10 original examples or two-inch by two-inch slides or a CD/DVD digital portfolio of work from upper-division studio courses taken at other institutions.

Most students will fulfill the requirements for this degree with 120 semester credit hours, of which 42 hours are Core Curriculum requirements. Due to the large number of major courses in the B.F.A. degree, full-time art students should enroll in two studio art courses, one art history and criticism course, and one or two Core Curriculum courses each semester. Art majors in the B.F.A. program should request an appointment with the undergraduate advisor for art programs before all enrollment periods. In order to complete all B.F.A. degree requirements in a timely fashion, both full-time and part-time art students should register every term for twice as many credits in their major course requirements as in Core Curriculum courses. Students seeking teacher certification should consult the College of Education and Human Development Advising and Certification Center.

All candidates for the degree must complete 63 semester credit hours of art (ART) and 18 semester credit hours of art history and criticism (AHC).

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Fine Arts degree in Art must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

AHC 1113, AHC 1123, or AHC 1133 may be used to satisfy the core requirement in Visual and Performing Arts as well as a major requirement.

Major Requirements

A. 39 semester credit hours of specifically required lower-division studio art and art history foundation courses completed as part of the first 60 hours of the curriculum:

AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350*
AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750*
AHC 1133	Survey of Modern Art*

ART 1003 Two Dimensional Foundations*
ART 1013 Three Dimensional Foundations*
ART 1213 Drawing I*
ART 1223 Drawing II*
ART 2113 Painting: Basic
ART 2223 New Media: Basic
ART 2313 Photography: Basic
ART 2413 Printmaking: Basic
ART 2613 Sculpture: Basic
ART 2713 Ceramics: Basic

* A grade of "C–" or better must be earned in these courses to satisfy the prerequisites for subsequent courses in the Art major.

B. 21 semester credit hours of upper-division art courses, including:

ART 3033 Contemporary Studio: Concepts and Practice
ART 4983 Senior Seminar and Exhibition

15 semester credit hours of upper-division art courses in one of the following specialized areas of study: ceramics, drawing, new media, painting, photography, printmaking, or sculpture.

C. 9 additional semester credit hours of upper-division art history and criticism courses:

AHC 3113 Contemporary Art

AND

6 elective hours of upper-division art history and criticism courses. The AHC course prefix must precede course numbers for all classes used to fulfill these degree requirements with the exception that students may substitute a specific course in the philosophy of art or a humanities course with a strong art history component for one (3 semester credit hours) upper-division art history course with consent of the undergraduate advisor for art programs.

D. 12 additional semester credit hours of art course electives are required, at least 9 hours of which must be upper-division (the ART course prefix must precede course numbers for all classes used to fulfill these degree requirements).

Note: For the B.F.A. degree in Art, the major grade point average is calculated using only ART and AHC courses.

Course Sequence Guide for B.F.A. Degree in Art

This course sequence guide is designed to assist students in completing their UTSA undergraduate Art degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.F.A. in Art – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
AHC 1113* (core and major)	3
ART 1003*	3
ART 1213*	3
WRC 1013 (core)	3
Mathematics core	3
Total semester hours	*15*
Spring	
AHC 1123*	3
ART 1013*	3
ART 1223*	3
WRC 1023 (core)	3
Natural Sciences Level I core	3
Total semester hours	*15*
SOPHOMORE YEAR	
Fall	
AHC 1133*	3
ART 2113	3
ART 2413	3
ECO 2003, 2013, or 2023 (core)	3
Natural Sciences Level II core	3
Total semester hours	*15*
Spring	
ART 2223	3
ART 2313	3
HIS 1043, 1053, or 2053 (core)	3
Social & Behavioral Science core	3
Upper-division ART specialization	3
Total semester hours	*15*
JUNIOR YEAR	
Fall	
AHC 3113	3
ART 2613	3
HIS 1043, 1053, or 2053 (core)	3
POL 1013 (core)	3
Upper-division ART specialization	3
Total semester hours	*15*
Spring	
ART 2713	3
POL 1133 or 1213 (core)	3
Upper-division AHC elective	3
Upper-division ART elective	3
Upper-division ART specialization	3
Total semester hours	*15*

Courses	Credit Hours
SENIOR YEAR	
Fall	
ART 3033	3
Literature core	3
Upper-division AHC elective	3
Upper-division ART elective	3
Upper-division ART specialization	3
Total semester hours	*15*
Spring	
ART 4893	3
ART Elective	3
Upper-division ART elective	3
Upper-division ART specialization	3
World Society & Issues core	3
Total semester hours	*15*

* Must be completed with a grade of "C–" or better.

Bachelor of Arts Degree in Art History and Criticism

The Bachelor of Arts degree in Art History and Criticism is awarded upon the completion of 120 hours, of which, 42 hours are Core Curriculum requirements. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

The B.A. in Art History and Criticism program offers art historical studies in the context of a liberal arts education. This degree program emphasizes critical thinking, research and writing skills in order to prepare students for careers in the arts, in a variety of fields requiring a liberal arts background, or pursuing graduate studies in art history and related fields.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Art History and Criticism must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

AHC 1113, AHC 1123, or AHC 1133 may be used to satisfy the core requirement in Visual and Performing Arts as well as a major requirement.

Major Requirements

A. 9 semester credit hours in lower-division art history and criticism foundation courses:

AHC 1113 Survey of Art and Architecture from Prehistoric Times to 1350*
AHC 1123 Survey of Art and Architecture in Europe and the New World from 1350 to 1750*
AHC 1133 Survey of Modern Art*

* A grade of "C–" or better must be earned in these courses to satisfy the prerequisites for subsequent courses in the Art History and Criticism major.

B. 18 semester credit hours in upper-division art history and criticism courses:

AHC 3113 Contemporary Art
AHC 3423 Arts of Ancient America
AHC 3523 Latin American Art
AHC 4333 Topics in Art History and Criticism (may be repeated for credit when topics vary)
AHC 4933 Art Gallery and Museum Internship

C. 9 semester credit hours in lower-division art courses:

ART 1003 Two Dimensional Foundations
ART 1013 Three Dimensional Foundations
ART 1213 Drawing I

D. 9 additional semester credit hours in support work to be chosen from offerings within the College of Liberal and Fine Arts, which may include anthropology (ANT), classical studies (CLA), communication (COM), English (ENG), history (HIS), humanities (HUM), philosophy (PHI), or other subjects as individually justified by the student and approved by the Undergraduate Advisor.

E. 33 semester credit hours of electives, at least 21 of which must be upper-division, and including as many semesters of a single language other than English as are necessary for the completion of the fourth UTSA semester course of that language.

Note: For the B.A. degree in Art History and Criticism, the major grade point average is calculated using ART and AHC courses, and the 9 hours of support work.

Course Sequence Guide for B.A. Degree in Art History and Criticism

This course sequence guide is designed to assist students in completing their UTSA undergraduate Art History and Criticism degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College*

of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans. Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Art History and Criticism – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
AHC 1113* (core and major)	3
ART 1003	3
ART 1213	3
WRC 1013 (core)	3
Mathematics core	3
Total semester hours	*15*
Spring	
AHC 1123*	3
ART 1013	3
WRC 1023 (core)	3
Language (semester I)	3 or 4
Natural Sciences Level I core	3
Total semester hours	*15 or 16*
SOPHOMORE YEAR	
Fall	
AHC 1133*	3
Language (semester II)	3 or 4
Literature core	3
Natural Sciences Level II core	3
Support work	3
Total semester hours	*15 or 16*
Spring	
ECO 2003, 2013, or 2023 (core)	3
POL 1013 (core)	3
Language (semester III)	3
Support work	3
Upper-division AHC	3
Total semester hours	*15*
JUNIOR YEAR	
Fall	
POL 1133 or 1213 (core)	3
Language (semester IV)	3
Support work	3
Upper-division AHC	3
World Society & Issues core	3
Total semester hours	*15*
Spring	
HIS 1043, 1053, or 2053 (core)	3
Social & Behavioral Science core	3
Upper-division AHC	3
Upper-division free elective	3
Upper-division free elective	3
Total semester hours	*15*
SENIOR YEAR	
Fall	
HIS 1043, 1053, or 2053 (core)	3
Upper-division AHC	3
Upper-division AHC	3
Upper-division free elective	3
Upper-division free elective	3
Total semester hours	*15*
Spring	
Free elective (to meet 120 hour minimum)	3
Upper-division AHC	3
Upper-division free elective	3
Upper-division free elective	3
Upper-division free elective	3
Total semester hours	*15*

* Must be completed with a grade of "C–" or better.

Minor in Art History and Criticism

The discipline of the history of art addresses cultural, historical, and critical issues through the visual arts. A Minor in Art History and Criticism provides students with a general overview of the discipline.

All students pursuing the Minor in Art History and Criticism must complete 18 semester credit hours.

A. 6 semester credit hours selected from the following:

AHC 1113	Survey of Art and Architecture from Prehistoric Times to 1350
AHC 1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750
AHC 1133	Survey of Modern Art

B. 12 semester credit hours selected from the following:

AHC 3113	Contemporary Art
AHC 3423	Arts of Ancient America
AHC 3523	Latin American Art
AHC 4333	Topics in Art History and Criticism (may be repeated for credit when topics vary)
AHC 4933	Art Gallery and Museum Internship

DEPARTMENT OF COMMUNICATION

The Department of Communication offers a Bachelor of Arts degree and a minor in Communication. Honors may also be earned in Communication. If a student majors in Communication, he or she may choose to concentrate his or her coursework in either Public Relations or Technical Communication.

Declaration of Major Policy

Before declaring a major in Communication, students must complete the pre-Communication sequence detailed below with a "C–" or better in each course. After satisfactory completion of pre-Communication sequence, students seeking a B.A. in Communication must declare their major by submitting a Declaration of Major form to the College of Liberal and Fine Arts Advising Center. Students may not enroll in specified 3000- and 4000-level courses in the Department of Communication before declaring a major.

Direct Admission Criteria

Transfer students who have completed transferable college credit in courses equivalent to the 18-semester-credit-hour pre-Communication sequence with a "C–" or better in each course will be directly admitted to the Communication major.

Department Honors

Students whose grade point average in the communication major (including support work) before the beginning of their final year at UTSA is 3.25 or above, and whose overall grade point average is 3.0, may earn Honors in Communication. In order to do so, a student must complete a substantial paper or project approved by the Department Honors Committee and maintain a 3.25 grade point average in both the major and support work. The grade point average requirements apply to all transfer work and courses at UTSA. In the event that a student does not meet the minimum grade point average requirements, the student may appeal to the Department Honors Committee for special consideration. Appropriate forms and letter(s) of recommendation from UTSA faculty are necessary for such consideration.

Bachelor of Arts Degree in Communication

The minimum number of semester credit hours required for this degree is 120, including Core Curriculum requirement hours. Thirty-nine of the 120 total semester credit hours required for the degree must be at the upper-division level. The College of Liberal and Fine Arts Signature Experience may be fulfilled by successful completion of COM 4533, COM 4723, COM 4813 or COM 4933.

Pre-Communication Sequence

In order to declare a Communication major, students must first earn a grade of "C–" or better in each course in the pre-Communication sequence that includes COM 2113, COM 3023, COM 3073, COM 3083, COM 3553 or COM 3563, and ENG 2413. Each COM course may be taken no more than three (3) times to improve a grade (however, students should refer to the *UTSA Information Bulletin* for the potential consequences of repeating courses).

Students who declare a concentration in Public Relations or Technical Communication must complete each course required for the concentration with a grade of "C–" or better.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Communication must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

Note: If a language is used to satisfy the three-hour World Society and Issues core requirement, students will need to take an additional three hours in the same language for the degree requirement.

Degree Requirements

A. Pre-Communication Sequence (18 semester credit hours):

COM 2113	Public Speaking
COM 3023	Foundations of Communication
COM 3073	Conduct of Communication Inquiry
COM 3083	Language and Communication Theory
COM 3553	Intercultural Communication
	or
COM 3563	International Communication
ENG 2413	Technical Writing

B. 6 semester credit hours in a single foreign language

C. 15 semester credit hours of free electives

B.A. in Communication (no concentration)

All candidates seeking this degree must fulfill the Core Curriculum requirements, the degree requirements, and the following:

A. 21 additional semester credit hours in Communication, at least 15 at the upper-division level

B. 3 semester credit hours of the capstone course: COM 4813 Theory and Practice of Social Interaction

C. 15 semester credit hours of approved support work in one of the following areas, 9 semester credit hours of which must be at the upper-division level:

- intercultural/international studies
- English language and composition, philosophy, and visual arts
- social and behavioral sciences
- business, management, marketing, and information systems
- other subjects as may be individually justified by the student and approved by the undergraduate advisor.

Course Sequence Guide for B.A. Degree in Communication

This course sequence guide is designed to assist students in completing their UTSA undergraduate Communication degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Communication – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
HIS 1043, 1053, or 2053 (core)	3
WRC 1013 (core)	3
Foreign Language (semester I)	3 or 4
Mathematics core	3
Social & Behavioral Science core	3
Total semester hours	*15 or 16*
Spring	
COM 2113*	3
HIS 1043, 1053, or 2053 (core)	3
WRC 1023 (core)	3
Foreign Language (semester II)	3 or 4
Natural Sciences Level I core	3
Total semester hours	*15 or 16*
SOPHOMORE YEAR	
Fall	
COM 3023*	3
COM 3083*	3
ENG 2413*	3
POL 1013 (core)	3
Natural Sciences Level II core	3
Total semester hours	*15*
Spring	
COM 3073*	3
COM 3553* or COM 3563*	3
ECO 2003 or ECO 2013 (core)	3
POL 1133 or POL 1213 (core)	3
Literature core	3
Total semester hours	*15*
JUNIOR YEAR	
Fall	
Free elective	3
Free elective	3
Support work	3
Upper-division COM elective	3
Upper-division COM elective	3
Total semester hours	*15*
Spring	
Free elective	3
Upper-division COM elective	3
Upper-division COM elective	3
Upper-division support work	3
Visual & Performing Arts core	3
Total semester hours	*15*
SENIOR YEAR	
Fall	
COM elective	3
Free elective	3
Support work/Free elective	3
Upper-division COM elective	3
Upper-division support work	3
Total semester hours	*15*
Spring	
COM 4813	3
COM elective	3
Free elective	3
Upper-division support work	3
World Society & Issues core	3
Total semester hours	*15*

* Must be completed with a grade of "C–" or better.

B.A. in Communication with a Public Relations Concentration

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements listed above. Additionally, students seeking a Public Relations Concentration must complete COM 3523, COM 3533, COM 3623, COM 4523, and COM 4533 with a grade of "C–" or better in each course.

A. 15 semester credit hours in Public Relations Concentration courses:

COM 3523	Public Relations
COM 3533	Writing for Public Relations
COM 3623	Commercial Publications
COM 4523	Case Studies in Public Relations
COM 4533	Public Relations Planning and Campaigns

B. 9 additional semester credit hours in Communication, at least 3 at the upper-division level

C. 9 semester credit hours of required support work:

ACC 2003	Foundations of Accounting
	or
ACC 2013	Principles of Accounting I
ECO 2023	Introductory Microeconomics
FIN 3003	Survey of Finance

D. 6 semester credit hours of approved support work in one of the following areas, at the upper-division level:

- intercultural/international studies
- English language and composition, philosophy, and visual arts
- social and behavioral sciences
- business, management, marketing, and information systems
- other subjects as may be individually justified by the student and approved by the undergraduate advisor.

B.A. in Communication with a Technical Communication Concentration

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements listed above. Additionally, students seeking a Technical Communication Concentration must complete COM 2433, COM 2733, COM 3413, COM 3623, and COM 4723 with a grade of "C–" or better in each course.

A. 15 semester credit hours in Technical Communication Concentration courses:

COM 2433	Editing
COM 2733	Introduction to Communication Technologies
COM 3413	Writing for New Media
COM 3623	Commercial Publications
COM 4723	Digital Media Production

B. 9 additional semester credit hours in Communication, at least 3 at the upper-division level

C. 9 semester credit hours of required support work:

ACC 2003	Foundations of Accounting
	or
ACC 2013	Principles of Accounting I
ECO 2023	Introductory Microeconomics
FIN 3003	Survey of Finance

D. 6 semester credit hours of approved support work in one of the following areas, at the upper-division level:

- intercultural/international studies
- English language and composition, philosophy, and visual arts
- social and behavioral sciences
- business, management, marketing, and information systems
- other subjects as may be individually justified by the student and approved by the undergraduate advisor.

Course Sequence Guide for B.A. Degree in Communication with a Public Relations or Technical Communication Concentration

This course sequence guide is designed to assist students in completing their UTSA undergraduate Communication degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Communication with a concentration – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
WRC 1013 (core)	3
HIS 1043, 1053, or 2053 (core)	3
Foreign Language (semester I)	3 or 4
Mathematics core	3
Social & Behavioral Science core	3
Total semester hours	*15 or 16*
Spring	
COM 2113*	3
HIS 1043, 1053, or 2053 (core)	3
WRC 1023 (core)	3
Foreign Language (semester II)	3 or 4
Natural Sciences Level I core	3
Total semester hours	*15 or 16*
SOPHOMORE YEAR	
Fall	
COM 3023*	3
COM 3083*	3
ENG 2413*	3
POL 1013 (core)	3
Natural Sciences Level II core	3
Total semester hours	*15*
Spring	
COM 3073*	3
COM 3553* or COM 3563*	3
ECO 2023 (core)	3
POL 1133 or POL 1213 (core)	3
Literature core	3
Total semester hours	*15*
JUNIOR YEAR	
Fall	
ACC 2003 or ACC 2013	3
COM 2433*(b) or Upper-division COM elective(a)	3
COM 3523*(a) or COM 2733*(b)	3
Free elective	3
Free elective	3
Total semester hours	*15*

Courses	Credit Hours
Spring	
COM 3533*(a) or COM 3413*(b)	3
COM 3623*(a) or Upper-division COM elective(b)	3
FIN 3003	3
Free elective	3
Visual & Performing Arts core	3
Total semester hours	*15*
SENIOR YEAR	
Fall	
COM 4523*(a) or COM 3623*(b)	3
COM elective	3
Free elective	3
Support work/Free elective	3
Upper-division support work	3
Total semester hours	*15*
Spring	
COM 4533*(a) or COM 4723*(b)	3
COM elective	3
Free elective	3
Upper-division support work	3
World Society & Issues core	3
Total semester hours	*15*

* Must be completed with a grade of "C–" or better.

(a) Public Relations concentration only.

(b) Technical Communication concentration only.

Minor in Communication

All students pursuing the Minor in Communication must complete 21 semester credit hours of courses in the Communication program.

To declare a Minor in Communication, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult the undergraduate advisor for Communication in the College of Liberal and Fine Arts Advising Center.

DEPARTMENT OF ENGLISH

The department offers a Bachelor of Arts degree in English with concentrations in professional writing, creative writing, and English language arts and reading as well as a minor in English Literature. Honors can also be earned in English.

Honors in English

Students whose grade point average in the English major (including support work) before the beginning of their final year at UTSA is 3.5 or above, and whose overall grade point average is 3.25, may earn Honors in English. To do so, a student must (1) maintain a 3.5 grade point average in both the major work and support work (the grade point average requirements apply to all transfer work and all courses taken at UTSA); (2) take three upper-division English classes with an Honors designation*; and (3) submit for approval from the Department Scholarship and Honors Committee a portfolio containing (a) three substantial papers (totaling a minimum of 25 pages) and (b) a critical statement (5 to 8 pages). The substantial papers, preferably written for English classes that have received Honors designation, will be evaluated in terms of research, accuracy, analysis, eloquence, and command of subject. The papers, if written for a previous course, may be revised and edited for honors submissions. The critical statement assesses the papers' contribution to the student's goals as an English major seeking honors.

*Any upper-division English class may be designated as Honors pending student petition and approval of the individual instructor. Honors designation involves additional coursework and faculty mentoring.

Bachelor of Arts Degree in English

The minimum number of semester credit hours required for this degree is 120, including the hours of Core Curriculum requirements. Thirty-nine of the 120 total semester credit hours required for the degree must be at the upper-division level. Students seeking teacher certification should consult the College of Education and Human Development Advising and Certification Center for information.

All candidates seeking this degree must complete ENG 2213 and ENG 4973 with a grade of "C–" or better.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in English must fulfill University Core Curriculum requirements in the same manner as other students. The course listed below will satisfy both a degree requirement and a Core Curriculum requirement; however, if this course is taken to satisfy both requirements, then students may need to take an additional course in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

ENG 2213 may be used to satisfy the core requirement in Literature as well as a major requirement.

Note: If a language is used to satisfy the three-hour World Society and Issues core requirement, students will need to take an additional three hours in the same language for the degree requirement.

Degree Requirements

A. 33 semester credit hours, 18 semester credit hours of which must be at the upper-division level:

1. 21 semester credit hours of required courses in English:

ENG 2213 Literary Criticism and Analysis
ENG 2223 British Literature I
ENG 2233 British Literature II
ENG 2263 American Literature I
ENG 2293 American Literature II

ENG 3223 Shakespeare: The Early Plays
or
ENG 3233 Shakespeare: The Later Plays

ENG 4973 Seminar for English Majors

2. 12 additional upper-division semester credit hours, 3 hours from each of the following categories. At least 6 of these hours must be in literature; of these 6 hours, at least 3 hours must include the study of American literature.

a. American, English, Historical

ENG 3033 American Literature, 1945 to Present
ENG 3063 American Literature, 1870–1945
ENG 4013 Restoration and Eighteenth-Century Literature
ENG 4023 Romantic Literature
ENG 4053 Modern British and American Poetry
ENG 4063 Medieval English Literature
ENG 4113 Renaissance Literature
ENG 4143 Victorian Literature
HUM 3023 The Medieval World
HUM 3033 Renaissance Ideas
HUM 3043 Classicism and Enlightenment
HUM 3053 The Romantic Age
HUM 3063 The Modern World

b. Linguistics, Rhetoric, Theory

ENG 3303 Theory and Practice of Composition
ENG 3313 Advanced Composition
ENG 3323 History of the English Language
ENG 3333 Introduction to the Structure of English
ENG 3343 Principles of English Linguistics
ENG 3393 Literary Theories
ENG 3413 Specialized Professional Writing
ENG 3423 Topics in Creative Writing
ENG 4423 Studies in Advanced Linguistics
ENG 4433 Advanced Professional Writing
ENG 4523 Writer's Workshop: Advanced Fiction Writing
ENG 4533 Writer's Workshop: Advanced Poetry Writing
ENG 4933 Internship
HUM 3013 History of Ideas

c. Cross-Cultural, Gender Studies, and Race & Ethnic Studies

ENG 3133 Women and Literature
ENG 3513 Mexican American Literature
ENG 3613 African American Literature
ENG 3713 Topics in Multiethnic Literatures of the United States
ENG 3813 Topics in Native American Literature
ENG 4393 Feminist Theory of Literature
ENG 4613 Topics in Mexican American Literature
ENG 4713 Topics in African American Literature
HUM 3623 Topics in National Cultures and Civilizations
HUM 3703 Topics in Popular Culture

d. Authors and Genres

CLA 3023 Classical Myths and Literature
CLA 3053 Topics in Classical Genres
ENG 3073 Young Adult Literature
ENG 3113 Studies in Individual Authors
ENG 3123 Modern Fiction
ENG 3153 Topics in Drama
ENG 3213 Chaucer
ENG 3223 Shakespeare: The Early Plays
ENG 3233 Shakespeare: The Later Plays
ENG 3243 Topics in the British Novel
ENG 3253 The American Novel
ENG 3273 Milton
ENG 4033 Literary Modes and Genres
HUM 3103 American Film
HUM 3203 Film Genres
HUM 3213 The Christian Classics
HUM 3223 The Bible as Literature
HUM 3303 Major Filmmaker
HUM 3403 Literature into Film

B. 12 additional semester credit hours of approved support work in one of the following categories (at least 6 hours of which must be at the upper-division level), which may also be used to satisfy a Core Curriculum requirement:

1. Classical studies (CLA), humanities (HUM), philosophy (PHI)
2. Foreign languages, foreign literature (including foreign literatures in translation)
3. Linguistics (including linguistics courses designated ENG, provided that they have not been counted toward the required semester credit hours in English)
4. Communication (COM)
5. Creative writing or expository and technical writing (including courses designated ENG, provided that they have not been counted toward the required semester credit hours in English)
6. American studies (AMS), anthropology (ANT), history (HIS), psychology (PSY), or sociology (SOC)

7. Art (ART or AHC) or Music (MUS)
8. Mexican American Studies
9. African American Studies
10. Women's Studies
11. Multicultural Studies
12. Other subjects as may be individually justified by the student, recommended by the academic advisor, and approved by the Department Chair.

C. 6 semester credit hours in a single language other than English

D. 27 semester credit hours of electives

Course Sequence Guide for B.A. Degree in English

This course sequence guide is designed to assist students in completing their UTSA undergraduate English degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in English – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
WRC 1013 (core)	3
Free elective	3
Mathematics core	3
Natural Sciences Level I core	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
WRC 1023 (core)	3
Free elective	3
Natural Sciences Level II core	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Total semester hours	*15*
SOPHOMORE YEAR	
Fall	
ENG 2213 (core and major)	3
Economics core	3
Foreign language (semester I)	3 or 4
Free elective	3
Political Science core	3
Total semester hours	*15 or 16*
Spring	
ENG 2223	3
ENG 2263	3
Foreign language (semester II)	3 or 4
Political Science core	3
Visual & Performing Arts core	3
Total semester hours	*15 or 16*
JUNIOR YEAR	
Fall	
ENG 2233	3
ENG 2293	3
Support work	3
Upper-division free elective	3
World Society & Issues core	3
Total semester hours	*15*
Spring	
Upper-division Literature category (a)*	3
Upper-division Literature category (b)*	3
Support work	3
Upper-division support work	3
Free elective	3
Total semester hours	*15*
SENIOR YEAR	
Fall	
ENG 3223 or ENG 3233	3
Free elective	3
Free elective	3
Upper-division free elective	3
Upper-division Literature category (c)*	3
Total semester hours	*15*
Spring	
ENG 4973	3
Free elective	3
Free elective (to meet 120 hour minimum)	1 or 3
Upper-division Literature category (d)*	3
Upper-division support work	3
Total semester hours	*13 or 15*

* At least one of the courses from categories (a), (b), (c), or (d) must include the study of American literature.

Bachelor of Arts Degree in English with a Professional Writing Concentration

All candidates for the Bachelor of Arts degree in English with a Professional Writing concentration must complete:

A. 51 semester credit hours, 27 semester credit hours of which must be at the upper-division level:

1. 30 semester credit hours:

ENG 2213 Literary Criticism and Analysis
ENG 2223 British Literature I
ENG 2233 British Literature II

ENG 2263 American Literature I
ENG 2293 American Literature II

ENG 3223 Shakespeare: The Early Plays
or
ENG 3233 Shakespeare: The Later Plays

ENG 3313 Advanced Composition
ENG 3413 Specialized Professional Writing
ENG 4933 Internship
ENG 4973 Seminar for English Majors

2. 9 additional upper-division semester credit hours, 3 hours from each of the categories: (a) American, English, Historical; (c) Cross-Cultural, Gender Studies, and Race & Ethnic Studies; and (d) Authors and Genres listed above under degree requirements for the B.A. in English; of these 9 hours, at least 3 hours must include the study of American literature.

3. 12 additional semester credit hours in professional writing, including the following 9 semester credit hours:

ENG 2413 Technical Writing
ENG 2433 Editing
ENG 4433 Advanced Professional Writing

B. 6 semester credit hours in a single language other than English

C. 21 semester credit hours of electives

Course Sequence Guide for B.A. Degree in English with a Concentration in Professional Writing

This course sequence guide is designed to assist students in completing their UTSA undergraduate English degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in English, Concentration in Professional Writing – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
WRC 1013 (core)	3
Free elective	3
Mathematics core	3
Natural Sciences Level I core	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
WRC 1023(core)	3
Free elective	3
Natural Sciences Level II core	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Total semester hours	*15*
SOPHOMORE YEAR	
Fall	
ENG 2213 (core and major)	3
ENG 2413	3
POL 1013 (core)	3
Economics core	3
Foreign language (semester I)	3 or 4
Total semester hours	*15 or 16*
Spring	
ENG 2223	3
ENG 2433	3
POL 1133 or 1213 (core)	3
Foreign language (semester II)	3 or 4
Visual & Performing Arts core	3
Total semester hours	*15 or 16*
JUNIOR YEAR	
Fall	
ENG 2233	3
ENG 2263	3
ENG 2293	3
ENG 3313	3
World Society & Issues core	3
Total semester hours	*15*
Spring	
ENG 3223 or ENG 3233	3
ENG 3413	3
Upper-division free elective	3
Upper-division free elective	3
Upper-division Literature category (a)*	3
Total semester hours	*15*
SENIOR YEAR	
Fall	
ENG 4433	3
ENG 4933	3
Free elective	3
Free elective	3
Upper-division Literature category (c)*	3
Total semester hours	*15*

Courses	Credit Hours
Spring	
ENG 4973	3
Free elective (to meet 120 hour minimum)	1 or 3
Upper-division free elective	3
Upper-division Literature category (d)*	3
Upper-division support work	3
Total semester hours	*13 or 15*

* At least one of the courses from categories (a), (c), or (d) must include the study of American literature.

Bachelor of Arts Degree in English with a Creative Writing Concentration

In order to declare a Creative Writing concentration, students must successfully demonstrate proficiency, professionalism, and commitment in their writing portfolios. Entrance into upper-division creative writing courses is not guaranteed and is also dependent upon course availability.

All candidates for the Bachelor of Arts degree in English with a Creative Writing concentration must complete:

A. 45 semester credit hours in English, 24 semester credit hours of which must be at the upper-division level:

   1. 21 semester credit hours:

      ENG 2213 Literary Criticism and Analysis
      ENG 2223 British Literature I
      ENG 2233 British Literature II
      ENG 2263 American Literature I
      ENG 2293 American Literature II

      ENG 3223 Shakespeare: The Early Plays
      or
      ENG 3233 Shakespeare: The Later Plays

      ENG 4973 Seminar for English Majors

   2. 6 semester credit hours in creative writing chosen from the following:

      ENG 2323 Creative Writing: Fiction
      ENG 2333 Creative Writing: Poetry
      ENG 2343 Creative Writing: Nonfiction

   3. 9 additional upper-division semester credit hours, 3 hours from each of the categories: (a) American, English, Historical; (c) Cross-Cultural, Gender Studies, and Race & Ethnic Studies; and (d) Authors and Genres listed above under degree requirements for the B.A. in English; of these 9 hours, at least 3 hours must include the study of American literature.

   4. 9 additional semester credit hours in creative writing, at least 6 hours of which must be at the 4000 level:

      ENG 3423 Topics in Creative Writing
      ENG 4523 Writer's Workshop: Advanced Fiction Writing
      ENG 4533 Writer's Workshop: Advanced Poetry Writing

B. 6 semester credit hours in a single language other than English

C. 27 semester credit hours of electives. Students are encouraged to repeat upper-level workshops, and to include ENG 2433 in their electives.

Course Sequence Guide for B.A. Degree in English with a Concentration in Creative Writing

This course sequence guide is designed to assist students in completing their UTSA undergraduate English degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in English, Concentration in Creative Writing – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
WRC 1013 (core)	3
Free elective	3
Mathematics core	3
Natural Sciences Level I core	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
WRC 1023 (core)	3
Free elective	3
Natural Sciences Level II core	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Total semester hours	*15*
SOPHOMORE YEAR	
Fall	
ENG 2213 (core and major)	3
Economics core	3
Foreign language (semester I)	3 or 4
Free Elective	3
Political Science core	3
Total semester hours	*15 or 16*
Spring	
ENG 2223	3
ENG 2263	3
ENG 2323, ENG 2333, or ENG 2343	3
Foreign language (semester II)	3 or 4
Political Science core	3
Total semester hours	*15 or 16*

Courses	Credit Hours
JUNIOR YEAR	
Fall	
ENG 2233	3
ENG 2293	3
ENG 2323, ENG 2333, or ENG 2343	3
Upper-division free elective	3
World Society & Issues core	3
Total semester hours	*15*
Spring	
ENG 3223 or ENG 3233	3
ENG 3423	3
Upper-division free elective	3
Upper-division Literature category (a)*	3
Visual & Performing Arts core	3
Total semester hours	*15*
SENIOR YEAR	
Fall	
ENG 4523 or ENG 4533	3
Free elective	3
Upper-division free elective	3
Upper-division free elective	3
Upper-division Literature category (c)*	3
Total semester hours	*15*
Spring	
ENG 4523 or ENG 4533	3
ENG 4973	3
Free elective (to meet 120 hour minimum)	1 or 3
Upper-division free elective	3
Upper-division Literature category (d)*	3
Total semester hours	*13 or 15*

* At least one of the courses from categories (a), (c), or (d) must include the study of American literature.

Bachelor of Arts Degree in English with an English Language Arts and Reading Concentration

The Bachelor of Arts degree in English with an English Language Arts and Reading concentration is designed for students intending to teach English at the secondary school level.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements listed below.

Students seeking teacher certification should contact the College of Education and Human Development (COEHD) Advising and Certification Center as early in their educational program as possible for information about teacher certification requirements.

Programs are subject to change without notice due to changes in the state's certification and/or program approval requirements. Teacher certification programs address standards of the State Board for Educator Certification. Standards can be found at http://www.tea.state.tx.us/.

Degree Requirements

A. 39 semester credit hours, 24 semester credit hours of which must be at the upper-division level:

1. 21 semester credit hours of required courses in English:

   ENG 2213 Literary Criticism and Analysis
   ENG 2223 British Literature I
   ENG 2233 British Literature II
   ENG 2263 American Literature I
   ENG 2293 American Literature II

   ENG 3223 Shakespeare: The Early Plays
   or
   ENG 3233 Shakespeare: The Later Plays

   ENG 4973 Seminar for English Majors

2. 6 additional upper-division semester credit hours in ENG chosen from each of the categories: (a) American, English, Historical; and (d) Authors and Genres listed above under degree requirements for the B.A. in English; of these 6 hours, at least 3 hours must include the study of American literature.

3. 3 semester credit hours chosen from the following:

   ENG 3033 American Literature, 1945 to Present
   ENG 3513 Mexican American Literature
   ENG 3613 African American Literature
   ENG 3713 Topics in Multiethnic Literatures of the United States

4. 9 additional semester credit hours in English Language Arts and Reading concentration:

   ENG 3303 Theory and Practice of Composition
   ENG 3333 Introduction to the Structure of English

   ENG 3323 History of the English Language
   or
   ENG 3343 Principles of English Linguistics

B. 30 semester credit hours of Professional Education and Reading coursework:

BBL 3403 Cultural and Linguistic Diversity in a Pluralistic Society
C&I 4203 Models of Teaching in the Content Areas of the Secondary School
EDP 3203 Learning and Development in the Secondary School Adolescent
EDP 4203 Assessment and Evaluation
EDU 2103 Social Foundations for Education in a Diverse U.S. Society
ESL 3063 Second Language Acquisition in Early Adolescence
IDS 2013 Introduction to Learning and Teaching in a Culturally Diverse Society
RDG 3673 Reading for Secondary Teachers–Grades 8–12
RDG 3773 Reading and Writing Across the Disciplines–Secondary
SPE 3603 Introduction to Special Education

C. 6 semester credit hours in Student Teaching:

C&I 4646 Student Teaching: Grades 8–12

D. 6 semester credit hours in a single language other than English

Course Sequence Guide for B.A. Degree in English with a Concentration in English Language Arts and Reading

This course sequence guide is designed to assist students in completing their UTSA undergraduate English degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in English, Concentration in English Language Arts and Reading – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
WRC 1013 (core)	3
Foreign language (semester I)	3 or 4
Mathematics core	3
Natural Sciences Level I core	3
U.S. History & Diversity core	3
Total semester hours	*15 or 16*
Spring	
WRC 1023 (core)	3
Foreign language (semester II)	3 or 4
Natural Sciences Level II core	3
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Total semester hours	*15 or 16*
SOPHOMORE YEAR	
Fall	
ENG 2213 (core and major)	3
ENG 3333	3
Economics core	3
Political Science core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Spring	
ENG 2223	3
ENG 2263	3
ENG 3303	3
IDS 2013	3
Political Science core	3
World Society & Issues core	3
Total semester hours	*18*
JUNIOR YEAR	
Fall	
BBL 3403	3
EDU 2103	3
ENG 2233	3
ENG 2293	3
ENG 3323 or ENG 3343	3
SPE 3603	3
Total semester hours	*18*
Spring	
EDP 3203	3
ENG 3033, 3513, 3613, or 3713	3
ENG 3223 or ENG 3233	3
ESL 3063	3
RDG 3673	3
Upper-division Literature category (a)*	3
Total semester hours	*18*
SENIOR YEAR	
Fall	
C&I 4203	3
EDP 4203	3
ENG 4973	3
RDG 3773	3
Upper-division Literature category (d)*	3
Total semester hours	*15*
Spring	
C&I 4646	6
Total semester hours	*6*

* At least one of the courses from categories (a) or (d) must include the study of American literature.

Minor in English Literature

All students pursuing the Minor in English Literature must complete 21 semester credit hours of English and American literature.

21 semester credit hours of required courses:

1. ENG 2213 Literary Criticism and Analysis
2. 9 semester credit hours selected from the following:

   ENG 2223 British Literature I
   ENG 2233 British Literature II
   ENG 2263 American Literature I
   ENG 2293 American Literature II

3. 3 semester credit hours selected from the following:

   ENG 3223 Shakespeare: The Early Plays
   ENG 3233 Shakespeare: The Later Plays

4. 6 additional upper-division semester credit hours of literature in English, 3 semester credit hours of which must include the study of American literature

DEPARTMENT OF HISTORY

The Department of History offers Bachelor of Arts degrees in American Studies and History. Students majoring in History may also select a concentration in Social Studies. The department also offers minors in American Studies and History.

Department Honors

Students whose grade point average in the History or American Studies majors (including support work) before the beginning of their final year at UTSA is 3.5 or above, and whose overall grade point average is 3.0, may earn Department Honors. To do so, students must enroll in the honors thesis course (HIS 4993 or AMS 4993) their final two semesters and must complete a substantial original research project approved by the faculty supervisor and another faculty member. Students must maintain a 3.5 grade point average in both the major and support work to be eligible for the award.

Bachelor of Arts Degree in American Studies

American Studies combines the study of history, literature, the arts, and social sciences to understand the diverse perspectives on cultural traditions and material practices shaping regional, ethnic, class, gender, and political diversity in the United States. American Studies students will conduct interdisciplinary study of topics such as race and ethnicity, gender and sexuality, transnationalism and border studies, urban experience, social justice, cultural studies, and religion. American Studies provides excellent preparation for careers in many fields, including law, journalism, government, foreign service, social work, international business, education, nonprofit, and public administration.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in American Studies must fulfill University Core Curriculum requirements in the same manner as other students. The course listed below will satisfy both a degree requirement and a Core Curriculum requirement; however, if this course is taken to satisfy both requirements, then students may need to take an additional course in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

AMS 2043 may be used to satisfy the core requirement in Social and Behavioral Science as well as a major requirement.

Degree Requirements

A. 39 semester credit hours in courses approved by the American Studies advisor, of which 21 must be at the upper-division level:

1. 24 semester credit hours of required courses:

   a. AMS 2043 Approaches to American Culture
      AMS 3123 Applications of American Studies
      AMS 3243 Studies in Transnationalism
      AMS 3343 Studies in Race and Ethnicity
      AMS 3443 Studies in Gender and Sexuality

   b. 6 semester credit hours of American Culture, three hours of which must be AMS 4823, and three hours from one of the following:

      AMS 3013 Early American Culture
      AMS 3023 Modern American Culture
      AMS 4823 Topics in American Culture

      AMS 4823 may be repeated for credit as long as the topics differ. Students can also take AMS 4983 Senior Thesis in their last semester in partial fulfillment of this requirement.

   c. AMS 4973 Advanced Seminar in American Studies

2. 15 semester credit hours of support work in upper-division courses focused on the Americas from at least two disciplines. American content may be interpreted as North, South and Central America, and the Caribbean. The American Studies faculty advisor must approve all support work.

   Up to 9 hours of Foreign Language study may be counted as support work. Students can also take 3 semester credit hours of AMS 4933 Internship in American Studies in partial fulfillment of this requirement.

B. 39 semester credit hours of electives

Students majoring in American Studies are encouraged to make advising appointments with faculty in AMS early in their course of study.

Course Sequence Guide for B.A. Degree in American Studies

This course sequence guide is designed to assist students in completing their UTSA undergraduate American Studies degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in American Studies – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
HIS 1043, 1053, or 2053 (core)	3
POL 1013 (core)	3
WRC 1013 (core)	3
Free elective	3
Mathematics core	3
Total semester hours	*15*
Spring	
HIS 1043, 1053, or 2053 (core)	3
POL 1133 or 1213 (core)	3
WRC 1023 (core)	3
Free elective	3
Natural Sciences Level I core	3
Total semester hours	*15*
SOPHOMORE YEAR	
Fall	
AMS 2043 (core and major)	3
ECO 2003, 2013, or 2023 (core)	3
Free elective	3
Free elective	3
Literature core	3
Total semester hours	*15*
Spring	
Free elective	3
Free elective	3
Natural Sciences Level II core	3
Upper-division support work (Discipline I)	3
World Society & Issues core	3
Total semester hours	*15*
JUNIOR YEAR	
Fall	
AMS 3123	3
AMS 3243	3
Free elective	3
Free elective	3
Upper-division support work	3
Total semester hours	*15*
Spring	
AMS 3343	3
AMS 3443	3
Free elective	3
Upper-division support work	3
Upper-division support work (Discipline II)	3
Total semester hours	*15*
SENIOR YEAR	
Fall	
AMS 4823	3
AMS 4973	3
Free elective	3
Upper-division support work	3
Visual & Performing Arts core	3
Total semester hours	*15*
Spring	
AMS 3013, 3023, 4823, or 4983	3
Free elective	3
Free elective	3
Free elective (to meet 120 hour minimum)	3
Upper-division free elective	3
Total semester hours	*15*

Minor in American Studies

All students pursuing a Minor in American Studies must complete 21 semester credit hours.

A. 15 semester credit hours of required courses:

AMS 2043 Approaches to American Culture
AMS 3123 Applications of American Studies
AMS 3243 Studies in Transnationalism
AMS 3343 Studies in Race and Ethnicity
AMS 3443 Studies in Gender and Sexuality

B. 6 additional semester credit hours from the following courses:

AMS 3013 Early American Culture
AMS 3023 Modern American Culture
AMS 4823 Topics in American Culture

Students have the option of taking AMS 4933 Internship in American Studies to substitute for one of the above courses.

To declare a Minor in American Studies, or seek approval of substitutions for course requirements, students should consult the College of Liberal and Fine Arts Advising Center or an AMS Faculty Advisor.

Bachelor of Arts Degree in History

The degree program in History combines the development of informed perspectives, cultivation of analytical skills, and mastery of content areas that cover the United States and different regions in the world. A major in History teaches a student to write effectively and expressively, to think critically, to analyze arguments, and to communicate ideas. These skills will all aid in the pursuit of a career in a variety of fields.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in History must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

Courses taken to satisfy core requirement in U.S. History and Diversity may not be used to satisfy degree requirements. One of the following courses should be used the satisfy the core requirement in World Society and Issues: HIS 2123, HIS 2133, HIS 2533, HIS 2543, HIS 2553, HIS 2573, IDS 2203, or IDS 2213.

Degree Requirements

A. 33 semester credit hours in the major, of which 21 must be at the upper-division level:

   1. HIS 2003 Historical Methods
      This is a foundational course for the major. Students must take it as early as possible in their program.

   2. 9 semester credit hours selected from the sophomore-level civilization courses, including HIS 2123, HIS 2133, and courses numbered HIS 2533 to HIS 2583.

   3. 18 upper-division semester credit hours of history courses, including at least one U.S., one European, and one Latin American, African, or Asian studies course.

   4. 3 semester credit hours from HIS 4973 Seminar in History. HIS 2003 Historical Methods is a prerequisite for enrollment in this course.

B. 9 semester credit hours in approved upper-division courses from other disciplines that support the study of history. The student must consult with his or her faculty advisor to define a cohesive support area, and the faculty advisor's approval is required for each course.

   Recommended areas for support work include, but are not limited to:

American Studies	English
Anthropology	Geography
Art History	Philosophy
Bicultural-Bilingual Studies	Political Science
Classics	Psychology
Communication	Sociology
Criminal Justice	Women's Studies
Economics	

C. 6 semester credit hours of a single language other than English

D. 30 semester credit hours of electives

Course Sequence Guide for B.A. Degree in History

This course sequence guide is designed to assist students in completing their UTSA undergraduate History degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in History – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
HIS 1043, 1053, or 2053 (core)	3
POL 1013 (core)	3
WRC 1013 (core)	3
Free elective	3
Mathematics core	3
Total semester hours	*15*
Spring	
HIS 1043, 1053, or 2053 (core)	3
POL 1133 or 1213 (core)	3
WRC 1023 (core)	3
Free elective	3
Natural Sciences Level I core	3
Total semester hours	*15*
SOPHOMORE YEAR	
Fall	
ECO 2003, 2013, or 2023 (core)	3
HIS 2003	3
Foreign language (semester I)	3 or 4
Literature core	3
Social & Behavioral Science core	3
Total semester hours	*15 or 16*
Spring	
Civilization course (core and major)	3
Foreign language (semester II)	3 or 4
Free elective	3
Free elective	3
Natural Sciences Level II core	3
Total semester hours	*15 or 16*
JUNIOR YEAR	
Fall	
Civilization course	3
Free elective	3
Upper-division HIS elective	3
Upper-division U.S. HIS	3
Upper-division support work	3
Total semester hours	*15*

Courses	Credit Hours
Spring	
Civilization course	3
Free elective	3
Upper-division European HIS	3
Upper-division HIS elective	3
Upper-division support work	3
Total semester hours	*15*

SENIOR YEAR

Fall	
Free elective	3
Upper-division African/Asian/Latin American HIS	3
Upper-division HIS Elective	3
Upper-division support work	3
Visual & Performing Arts core	3
Total semester hours	*15*
Spring	
HIS 4973	3
Free elective (to meet 120 hour minimum)	1 or 3
Upper-division free elective	3
Upper-division free elective	3
Upper-division free elective	3
Total semester hours	*13 or 15*

Bachelor of Arts Degree in History with a Concentration in Social Studies

The Bachelor of Arts Degree in History with a concentration in Social Studies is designed for students intending to teach history, geography, government and economics at the secondary school level. The signature experience is encapsulated in HIS 4143 History Standards and Their Public Reception. This course reviews the ongoing debates over the content of history curriculum in the schools among historians, educators and the public.

The minimum number of semester credit hours for this degree is 132, including required coursework for teacher certification. Students seeking teacher certification should also refer to the requirements listed in the College of Education and Human Development section of this catalog.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in History with a concentration in Social Studies must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements. For a complete listing of the courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

GRG 2613 may be used to satisfy the Level Two Natural Sciences core requirement as well as a major requirement. HIS 1043 and HIS 1053 may be used to satisfy the U.S. History and Diversity core requirement as well as a major requirement. GRG 1013 may be used to satisfy the Social and Behavioral Science core requirement as well as a major requirement. ECO 2003 may be used to satisfy the Economics core requirement as well as a major requirement. HIS 2123 or IDS 2203 may be used to satisfy the World Society and Issues core requirement as well as a major requirement.

Degree Requirements

A. 42 semester credit hours of required courses:

ANT	1013	Introduction to Anthropology
ECO	2003	Economic Principles and Issues
ECO	2013	Introductory Macroeconomics
GRG	1013	Fundamentals of Geography
GRG	1023	World Regional Geography
GRG	2613	Physical Geography
HIS	1043	United States History: Pre-Columbus to the Civil War Era
HIS	1053	United States History: Civil War Era to Present
HIS	2003	Historical Methods
HIS	2123	Introduction to World Civilization to the Fifteenth Century or
IDS	2203	World Civilization to the Fifteenth Century
HIS	2133	Introduction to World Civilization since the Fifteenth Century
HIS	2563	Introduction to European Civilization
HIS	4143	History Standards and Their Public Reception
HIS	4973	Seminar in History

B. 6 semester credit hours of civilization courses from among the following:

ANT	3273	Civilizations of Mexico
ANT	3723	Ancient Civilizations
HIS	2533	Introduction to Latin American Civilization
HIS	2543	Introduction to Islamic Civilization
HIS	2553	Introduction to East Asian Civilization
HIS	2573	Introduction to African Civilization
HIS	2583	Introduction to South Asian Civilization

C. 15 semester credit hours of upper-division history courses: specifically 6 hours in U.S. history, 3 hours in European history, and 6 hours in either Latin American, Asian or African history.

D. 6 semester credit hours from among the following:

HIS	3093	United States Constitutional History
POL	3023	Civil Liberties in American Law and Practice
POL	3113	American Political Theory
POL	3283	The American Presidency
POL	3323	Constitutional Law

E. 3 semester credit hours from among the following:

POL	2603	International Politics
POL	2633	Comparative Politics
POL	3103	Political Ideology
POL	3143	Political Philosophy: Modern

POL	3193	Theories of Citizenship
POL	3363	Political Parties and Interest Groups
POL	3373	The Legislative Process
POL	3393	Latin American Politics
POL	3403	European Politics
POL	3503	American Foreign Policy since World War II

F. 3 semester credit hours from among the following:

GRG	3113	Geography of the United States and Canada
GRG	3123	Geography of Latin America
GRG	3133	Geography of Europe
GRG	3213	Cultural Geography
GRG	3513	Urban Geography
GRG	3533	Geography of Economic Activity
GRG	3643	Political Geography
GRG	3723	Physiography

G. 33 semester credit hours in communication, reading and education:

COM	1043	Introduction to Communication
BBL	3403	Cultural and Linguistic Diversity in a Pluralistic Society
C&I	4203	Models of Teaching in the Content Areas of the Secondary School
C&I	4646	Student Teaching: Grades 8–12
EDP	3203	Learning and Development in the Secondary School Adolescent
EDP	4203	Assessment and Evaluation
EDU	2103	Social Foundations for Education in a Diverse U.S. Society
IDS	2013	Introduction to Learning and Teaching in a Culturally Diverse Society
RDG	3773	Reading and Writing Across the Disciplines–Secondary
SPE	3603	Introduction to Special Education

Course Sequence Guide for B.A. Degree in History with a Concentration in Social Studies

This course sequence guide is designed to assist students in completing their UTSA undergraduate History degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in History, Concentration in Social Studies – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
ANT 1013	3
ECO 2003 (core and major)	3
HIS 1043 (core and major)	3
POL 1013 (core)	3
WRC 1013 (core)	3
Mathematics core	3
Total semester hours	*18*
Spring	
WRC 1023 (core)	3
COM 1043	3
ECO 2013	3
HIS 1053 (core and major)	3
POL 1133 or 1213 (core)	3
Natural Sciences Level I core	3
Total semester hours	*18*
SOPHOMORE YEAR	
Fall	
GRG 1013 (core and major)	3
HIS 2003	3
HIS 2123* or IDS 2203 (core and major)	3
HIS 2563	3
IDS 2013	3
Literature core	3
Total semester hours	*18*
Spring	
EDU 2103	3
GRG 2613 (core and major)	3
HIS 2133*	3
Civilization course from Section B	3
Upper-division U.S. HIS	3
Visual & Performing Arts core	3
Total semester hours	*18*
JUNIOR YEAR	
Fall	
BBL 3403	3
EDP 3203	3
SPE 3603	3
POL course from Section E	3
POL or HIS course from Section D	3
Upper-division African/Asian/Latin American HIS	3
Total semester hours	*18*

Courses	Credit Hours
Spring	
EDP 4203	3
GRG 1023	3
RDG 3773	3
POL or HIS course from Section D	3
Upper-division European HIS	3
Upper-division U.S. HIS	3
Total semester hours	*18*
SENIOR YEAR	
Fall	
C&I 4203	3
HIS 4143	3
HIS 4973	3
Civilization course from Section B	3
GRG course from Section F	3
Upper-division African/Asian/Latin American HIS	3
Total semester hours	*18*
Spring	
C&I 4646	6
Total semester hours	*6*

* HIS 2123 (or IDS 2203) and HIS 2133 may be taken in either order.

Minor in History

All students pursuing a Minor in History must complete 18 semester credit hours.

A. 9 semester credit hours of required courses:

HIS 2003 Historical Methods

HIS 2123 Introduction to World Civilization to the Fifteenth Century
or
HIS 2133 Introduction to World Civilization since the Fifteenth Century

Up to 3 hours chosen from the following:

HIS 2533 Introduction to Latin American Civilization
HIS 2543 Introduction to Islamic Civilization
HIS 2553 Introduction to East Asian Civilization
HIS 2563 Introduction to European Civilization
HIS 2573 Introduction to African Civilization
HIS 2583 Introduction to South Asian Civilization

B. 9 additional semester credit hours of upper-division history electives

To declare a Minor in History, obtain advice, or seek approval for substitutions for course requirements, students should consult the College of Liberal and Fine Arts Advising Center.

DEPARTMENT OF MODERN LANGUAGES AND LITERATURES

The Department of Modern Languages and Literatures offers a major in Spanish designed to develop the student's specialized knowledge of culture, literature, and language. The department also offers a major in Modern Language Studies, which gives students the opportunity to study various cultural aspects of a language area (including French, German, Japanese, and Russian). Minors in French, German, Russian, Spanish, Comparative Literature, Foreign Languages, and Linguistics give students the opportunity to refine language skills, develop linguistic awareness, and acquire knowledge of a foreign culture and/or literature. Skills-development courses, which facilitate speaking, reading, writing, and understanding of a foreign language, are offered in these languages as well as in Arabic, Chinese, and Italian. Courses in comparative studies in the humanities relate literatures to the other arts and general currents of culture and humanistic thought, while coursework in linguistics focuses on general concepts of linguistic structure and meaning and relates language development to other areas of human understanding. Additional study abroad is strongly encouraged. The department also offers courses in Media Studies, which allow students to put into practice their theoretical studies in the humanities.

Department Honors

A student whose grade point average in courses taken at UTSA is at least 3.0, whose grade point average in upper-division courses in one of the fields offered as a major in the department is at least 3.5, and who has completed 18 semester credit hours at the upper-division level in the major (24 hours for Spanish) may petition the undergraduate faculty advisor to enroll in the appropriate honors course (FRN 4993, GER 4993, or SPN 4993 Honors Research). If the student maintains the minimum grade point averages upon completion of the course, the Department Honors Committee will evaluate the project the student completed in the honors course and determine whether he or she will be awarded Department Honors.

Bachelor of Arts Degree in Spanish

The minimum number of semester credit hours required for this degree, including the hours in the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

The Signature Experience, included in the required thirty-nine hours, serves as a peak in the student's educational program by providing various opportunities in which to display or practice knowledge gained at UTSA. The Signature Experience can be realized as one of a number of study or practical options, such as an independent study, internship, and study abroad.

The prerequisite for Spanish courses at the 3000 and 4000 levels is either SPN 2023, SPN 3003, or an appropriate placement test score. Information regarding the test may be obtained by contacting the Department of Modern Languages and Literatures. All courses are taught in Spanish unless otherwise noted.

Students seeking teacher certification should consult the College of Education and Human Development Advising and Certification Center for information.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Spanish must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and a Core Curriculum requirement; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

SPN 2003, SPN 2013, SPN 2023, SPN 2513, or SPN 2523 should be used to satisfy the World Society and Issues core requirement.

Degree Requirements

A. 39 semester credit hours in the major, all of which must be at the upper-division level:

1. 9 semester credit hours of required courses (recommended for early completion):

   SPN 3043 Advanced Reading
   SPN 3063 Grammar and Composition
   SPN 4003 Advanced Language Skills

2. 6 semester credit hours selected from the following:

   SPN 3013 Spanish Phonetics and Pronunciation
   SPN 3113 Linguistic Structures of Spanish
   SPN 4113 Topics in Spanish Linguistics

3. 9 semester credit hours selected from the following:

   SPN 3413 The Literature of Spain from the Middle Ages to 1700
   SPN 3423 The Literature of Spain from 1700 to the Present
   SPN 3463 Latin American Literature to Modernism
   SPN 3473 Latin American Literature since Modernism
   SPN 4203 Topics in Hispanic Literatures

4. 6 semester credit hours selected from the following:

   SPN 3613 Spanish Culture and Civilization
   SPN 3623 Latin American Culture and Civilization
   SPN 4303 Topics in Hispanic Cultures

5. 9 semester credit hours of Spanish electives, 3 semester credit hours of which must be at the 4000 level

6. 3 semester credit hours as Signature Experience. The course can be applied to section A5 as part of the elective hours or to the support work in section B. The following courses can be used as the Signature Experience:

   FL 3033,6 Advanced Language Study Abroad
   SPN 4113 Topics in Spanish Linguistics
   SPN 4203 Topics in Hispanic Literatures
   SPN 4303 Topics in Hispanic Cultures
   SPN 4933 Internship in Spanish
   SPN 4993 Honors Research
   Study abroad experience with transfer credits from another university

B. 12 additional semester credit hours of coursework in a single area or a combination, selected from the following in consultation with the undergraduate advisor: upper-division Spanish, literature, culture, linguistics, comparative studies in the humanities, foreign language (FL: translation, cross-cultural communication, study abroad, etc.), media studies, another foreign language, history, anthropology, art, or other related areas.

C. 27 semester credit hours of electives

Course Sequence Guide for B.A. Degree in Spanish

This course sequence guide is designed to assist students in completing their UTSA undergraduate Spanish degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Spanish – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
HIS 1043, 1053, or 2053 (core)	3
SPN 1014 or free elective	4 or 3
WRC 1013 (core)	3
Mathematics core	3
Natural Sciences Level I core	3
Total semester hours	*15 or 16*
Spring	
HIS 1043, 1053, or 2053 (core)	3
SPN 1024 or free elective	4 or 3
WRC 1023 (core)	3
Social & Behavioral Science core	3
Natural Sciences Level II core	3
Total semester hours	*15 or 16*
SOPHOMORE YEAR	
Fall	
ECO 2003, 2013, or 2023 (core)	3
POL 1013 (core)	3
SPN 2013 or free elective	3
Free elective	3
Literature core	3
Total semester hours	*15*

Courses	Credit Hours
Spring	
POL 1133 or 1213 (core)	3
SPN 2023 or World Society & Issues core	3
Free elective	3
Free elective	3
Visual & Performing Arts core	3
Total semester hours	*15*

JUNIOR YEAR

Fall	
SPN 3013, 3113, or 4113	3
SPN 3063	3
Free elective	3
Free elective	3
Support work	3
Total semester hours	*15*
Spring	
SPN 3013, 3113, or 4113	3
SPN 3043	3
SPN 4003	3
Support work	3
Upper-division SPN elective	3
Total semester hours	*15*

SENIOR YEAR

Fall	
SPN 3413, 3423, 3463, 3473, or 4203	3
SPN 3413, 3423, 3463, 3473, or 4203	3
SPN 3613, 3623, or 4303	3
Free elective (to meet 120 hour minimum)	1 or 3
Support work	3
Total semester hours	*13 or 15*
Spring	
SPN 3413, 3423, 3463, 3473, or 4203	3
SPN 3613, 3623, or 4303	3
4000-level SPN elective	3
Support work	3
Upper-division SPN elective	3
Total semester hours	*15*

Minor in Spanish

All students pursuing the Minor in Spanish must complete 18 semester credit hours.

A. 15 semester credit hours of required language skill courses:

SPN 2006 Intermediate Spanish-Accelerated
or
SPN 2023 Intermediate Spanish II

SPN 3003 Oral and Written Expression
SPN 3033 Oral Communication Skills
SPN 3043 Advanced Reading
SPN 3063 Grammar and Composition
or
SPN 4003 Advanced Language Skills

B. 3 semester credit hours of other upper-division Spanish courses chosen in consultation with the advisor

Bachelor of Arts Degree in Modern Language Studies

The major in Modern Language Studies addresses the growing need for students to prepare for the demands brought about by globalization and the increased national focus on international security. It provides the opportunity for UTSA students to graduate with an emphasis in a language area according to their individual career interests. It is designed to give students the opportunity to structure their program in a variety of concentrations, including double majors. By selecting the Modern Language Studies major, students receive a well-rounded humanistic education and prepare themselves for jobs requiring a flexible liberal arts degree, among them careers in government, national security, public service, teaching, international business, banking, international media, communications, tourism, foreign relations, and publishing. The Modern Language Studies major also develops skills, knowledge, and cultural awareness which provide a solid foundation for successful work in graduate studies in the humanities and social sciences, as well as in law and medicine.

The program includes three main components:

1. The learning of a specific language

   For this major, the student will move through three levels of proficiency. The first and second levels are completed with the basic four-semester sequence, Elementary I–II and Intermediate I–II courses in the chosen language. The third level is completed by taking 12 semester credit hours of upper-division coursework after successful completion of the basic sequence. A placement test will determine at which level of the sequence the student should start the study of a language.

2. The linguistic theory underlying languages and language learning

   The introductory linguistic course gives students a basis for more advanced theoretical approaches to language studies in general.

3. The cultural component

   A series of courses taught in English addresses the study of the literature and culture of each individual language taught in the program.

   The courses in comparative studies address various issues related to several regions, periods and fields of study.

Each of these basic components can be augmented using the 18 semester credit hours of support work. By carefully preparing a plan of study with an academic advisor, students can tailor the concentration to their own needs.

The following optional components are strongly recommended:

1. Study Abroad

   Study abroad in the target language environment will give students the opportunity to further enhance their language and culture skills. Students are encouraged to include a semester or at least a summer abroad in their degree plan.

2. Languages Across the Curriculum

   1-semester-credit-hour language courses offered online (FL 3101) will complement the student's support area courses in other disciplines, such as history and political science. These add-on components will mirror the topics taught in the regular courses.

The minimum number of semester credit hours required for the Bachelor in Arts degree in Modern Language Studies, including the hours in the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level. Students seeking teacher certification should consult the College of Education and Human Development Advising and Certification Center for information.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Modern Language Studies must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy Core Curriculum requirements, see pages 3–5 of this catalog.

CSH 1103, CSH 1113, or CSH 2313 should be used to satisfy the core requirement in Literature. CSH 1213 or CSH 2113 should be used to satisfy the core requirement in World Society and Issues.

Degree Requirements

A. 36 semester credit hours in the major:

   1. 18 semester credit hours of language courses in a single discipline:

      6 semester credit hours in intermediate courses
      12 semester credit hours in upper-division courses in a single language discipline

   2. 3 semester credit hours in linguistics:

      LNG 3813 Introduction to Linguistics

   3. 12 semester credit hours of courses in comparative studies and/or in literature in translation, 6 hours of which must be at the upper-division level:

      a. 3 to 6 semester credit hours of language-specific literature and culture:

         CSH 1213 Topics in World Cultures
         CSH 2113 The Foreign Film
         FRN 2333 French Literature in English Translation
         GER 2333 German Literature in English Translation
         ITL 2333 Italian Literature in English Translation
         RUS 2333 Russian Literature in English Translation
         SPN 2333 Hispanic Literature in English Translation

      b. 6 to 9 semester credit hours of comparative studies:

         CSH 1103 Literary Masterpieces of Western Culture I
         CSH 1113 Literary Masterpieces of Western Culture II
         CSH 2313 Introduction to Literary Studies
         CSH 3023 Studies in Comparative Literature
         CSH 3823 Advanced Topics in World Cultures
         MES 3113 Film Studies

   4. 3 semester credit hours of signature experience (FL 4953 Special Projects, study abroad, internship, etc.). Students in the Honors program are encouraged to complete an Honors thesis.

B. 18 semester credit hours of support work in any language or internationally focused topics in such disciplines as African American studies, American studies, anthropology, art history, bicultural-bilingual studies, classics, communication, English as a second language, geography, history, humanities, interdisciplinary studies, international business, international studies, linguistics, literature, music history, philosophy, political science, psychology, sociology, and women's studies. Course selections must be approved by the academic advisor.

   Study Abroad and Languages Across the Curriculum courses are strongly recommended.

C. 24 semester credit hours of electives

Course Sequence Guide for B.A. Degree in Modern Language Studies

This course sequence guide is designed to assist students in completing their UTSA undergraduate Modern Language Studies degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Modern Language Studies – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
HIS 1043, 1053, or 2053 (core)	3
WRC 1013 (core)	3
Language 1014 or free elective	4 or 3
Mathematics core	3
Natural Sciences Level I core	3
Total semester hours	*15 or 16*
Spring	
HIS 1043, 1053, or 2053 (core)	3
WRC 1023 (core)	3
Language 1024 or free elective	4 or 3
Natural Sciences Level II core	3
Social & Behavioral Science core	3
Total semester hours	*15 or 16*
SOPHOMORE YEAR	
Fall	
ECO 2003, 2013, or 2023 (core)	3
POL 1013 (core)	3
Free elective	3
Language 2013 (Intermediate I)	3
Literature core	3
Total semester hours	*15*
Spring	
POL 1133 or 1213 (core)	3
Free elective	3
Language 2023 (Intermediate II)	3
Visual & Performing Arts core	3
World Society & Issues core	3
Total semester hours	*15*
JUNIOR YEAR	
Fall	
LNG 3813	3
Degree requirement A.3.a.	3
Free elective	3
Support work	3
Upper-division language course	3
Total semester hours	*15*
Spring	
Degree requirement A.3.a. or b.	3
Degree requirement A.3.a. or b.	3
Free elective	3
Support work	3
Upper-division language course	3
Total semester hours	*15*

Courses	Credit Hours
SENIOR YEAR	
Fall	
Degree requirement A.3.a. or b.	3
Support work	3
Support work	3
Upper-division language course	3
Upper-division language course	3
Total semester hours	*15*
Spring	
Free elective	3
Free elective (to meet 120 hour minimum)	1 or 3
Signature Experience	3
Support work	3
Support work	3
Total semester hours	*13 or 15*

Minor in French

All students pursuing the Minor in French must complete 18 semester credit hours at the 2000 level and above.

A. 9 semester credit hours of required language skill courses:

FRN 2013 Intermediate French I
FRN 2023 Intermediate French II
FRN 3023 Advanced Language Skills

B. 9 additional semester credit hours of French or French-related topics (including CSH and FL), 6 hours of which must be at the upper-division level, chosen in consultation with the advisor for the Minor in French

Minor in German

All students pursuing the Minor in German must complete 18 semester credit hours at the 2000 level and above.

A. 9 semester credit hours of required language skill courses:

GER 2013 Intermediate German I
GER 2023 Intermediate German II
GER 3023 Advanced Language Skills

B. 9 additional semester credit hours of German or German-related courses (including CSH and FL), 6 semester credit hours of which must be at the upper-division level, chosen in consultation with the advisor for the Minor in German

Minor in Comparative Literature

The Minor in Comparative Literature offers an opportunity to study texts in a manner that transcends national and linguistic boundaries. It enables students to develop, through their majors, a solid grounding in one particular tradition (e.g., English, Spanish, French) or one discipline (e.g., history, music) while also embracing a broader perspective through the minor. A student minoring in comparative

literature may wish to pursue graduate work in comparative literature or in a specific national literary tradition or to pursue a career in translation, teaching, publishing, or writing. The Minor in Comparative Literature fosters the sophistication appropriate to a liberal arts degree.

All students pursuing the Minor in Comparative Literature must complete 18 semester credit hours.

A. 12 semester credit hours of upper-division literature courses, selected from at least two of the following disciplines: Classics, English, French, German, Italian, Russian, or Spanish

B. 6 semester credit hours of upper-division courses in comparative studies in the humanities:

   1. CSH 3023 Studies in Comparative Literature

   2. 3 semester credit hours of an additional upper-division CSH course

Minor in Foreign Languages

The Minor in Foreign Languages offers an opportunity to increase proficiency in reading, writing, speaking, and listening skills in a foreign language. The minor will lead to the acquisition of metalinguistic skills and an enhanced understanding of the target culture and its orientation to world communication.

All students pursuing the Minor in Foreign Languages must complete 18 semester credit hours at the 2000 level and above.

A. 6 semester credit hours of language skill courses in the same language at the 2000 level or above

B. 12 additional semester credit hours of language and linguistics courses (including FL) in the department, 9 hours of which must be at the upper-division level

Minor in Linguistics

The Minor in Linguistics offers an enhanced awareness of the components, functions, and interfaces of human language. It prepares students for careers and advanced study for which such awareness is essential through coursework aligned with a student's own professional goals and intellectual interests.

All students pursuing the Minor in Linguistics must complete 18 semester credit hours, at least 9 of which must be drawn from outside the major.

A. 3 semester credit hours selected from the following:

   ENG 3343 Principles of English Linguistics
   LNG 3813 Introduction to Linguistics

B. 3 semester credit hours selected from the following courses in the linguistics of a particular language:

   ENG 3323 History of the English Language
   ENG 3333 Introduction to the Structure of English
   SPN 3013 Spanish Phonetics and Pronunciation
   SPN 3113 Linguistic Structures of Spanish
   SPN 4113 Topics in Spanish Linguistics
   SPN 4123 The Spanish of the Southwest

C. 6 semester credit hours selected from the following courses in psycholinguistics, anthropological linguistics, sociolinguistics, or historical linguistics:

   ANT 2053 Introduction to Cultural Anthropology
   BBL 3013 Language Analysis and Bilingualism
   BBL 3133 Language Development in Bilinguals
   BBL 3403 Cultural and Linguistic Diversity in a Pluralistic Society
   FL 4013 Cross-Cultural Communication and Foreign Languages
   LNG 3833 Sociolinguistics
   LNG 3843 Gender Issues in Language
   PSY 4323 Psychology of Language

D. 6 additional semester credit hours chosen in consultation with an advisor in one or more of the following approved areas: anthropology, bicultural-bilingual studies, English, foreign languages, and linguistics

Minor in Russian

All students pursuing the Minor in Russian must complete 18 semester credit hours at the 2000 level and above.

A. 6 semester credit hours of required language skill courses:

   RUS 2013 Intermediate Russian I or an equivalent FL course
   RUS 2023 Intermediate Russian II or an equivalent FL course

B. 12 additional semester credit hours of Russian or Russian-related courses (including CSH and FL), 9 hours of which must be at the upper-division level

DEPARTMENT OF MUSIC

The Department of Music offers the Bachelor of Music degree and the Bachelor of Arts in Music. Students may select the Bachelor of Music in Music Studies or the Bachelor of Music with an emphasis in either music performance, composition, or music marketing. The department also offers a Minor in Music, a Certificate in Music Technology, and a Certificate in Jazz Studies. The Department of Music is accredited by the National Association of Schools of Music.

Students entering the Bachelor of Music program with a Music Studies concentration may be required to satisfy additional requirements as prescribed by the State Board for Educator Certification (SBEC) and are advised to consult the College of Education and Human Development Advising and Certification Center.

A diagnostic examination in music theory is given to music majors entering UTSA for the first time. This examination is given at the beginning of each semester and used as an aid in counseling.

In order to declare music as a major, students must successfully audition for faculty in their principal performance area. If a student is not enrolled in Private Instruction for two consecutive long semesters (Fall or Spring), the student must re-audition for admission into the music program and for placement in an appropriate level of private instruction.

The music faculty and students support the COLFA Signature Experience through the following capstone experiences in the music studies concentration and the three undergraduate music emphases:

Music Studies: Student Teaching (C&I 4716). The student applies knowledge from his or her undergraduate music and education training and leads music learning in the public school music classroom under the supervision and guidance of a cooperating music teacher and a university supervisor.

Music Performance: Senior Recital (MUS 4561). The student performs a one-hour recital under the guidance and supervision of his or her music professor. This performance is adjudicated by a panel of a minimum of three music faculty and includes representative solo and chamber works from a broad repertoire.

Composition: Senior Recital (MUS 4561). The student organizes a recital of his or her own compositions. Under the guidance and supervision of a music professor, works are presented in a variety of musical genres and are adjudicated by the composition faculty.

Music Marketing: Music Marketing Internship (MUS 4933). The student coordinates and establishes his or her own internship in a professional setting. Under the guidance and supervision of a music business leader and university professor, the student applies knowledge and skills from their university coursework.

Bachelor of Music Degree

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 133 in the Music Studies concentration, 130 in the Composition emphasis, 130 in the Music Performance emphasis, and 130 in the Music Marketing emphasis. Undergraduates seeking elementary teacher certification must complete the Interdisciplinary Studies degree.

All candidates for this degree must fulfill the Core Curriculum requirements and the music degree requirements, which are listed below. In addition, a candidate for the Bachelor of Music degree must complete the course requirements for the concentration or emphasis declared by the candidate.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Music degree must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MUS 2243 may be used to satisfy the core requirement in Visual and Performing Arts as well as a major requirement. Vocal Performance majors should take ITL 1014 to satisfy the core requirement in World Society and Issues.

Music Degree Requirements

All candidates for the Bachelor of Music degree, regardless of concentration or emphasis, must complete the following 45–47 semester credit hours of required music courses. (Note that MUS 2243 World Music in Society may also be used to satisfy Core Curriculum requirements in Visual and Performing Arts):

MUS	1102	Aural Skills I
MUS	1112	Basic Skills of Music I
MUS	1122	Aural Skills II
MUS	1132	Basic Skills of Music II
MUS	1512	Music Performance-Private Instruction
MUS	1542	Music Performance-Private Instruction I
MUS	2102	Aural Skills III
MUS	2112	Aural Skills IV
MUS	2152	Basic Skills of Music III
MUS	2162	Basic Skills of Music IV
MUS	2243	World Music in Society
MUS	2403	Conducting I
MUS	2542	Music Performance-Private Instruction II (2 semesters)
MUS	3213	Music in Civilization I
MUS	3223	Music in Civilization II
MUS	3413	Psychology of Music
MUS	3532	Music Performance-Private Instruction III (2 semesters)*

Keyboard requirement (2 semester credit hours):

Non-Keyboard Principal Instrument
MUS 2421 Class Piano 3
MUS 2521 Class Piano 4

or

Keyboard Principal Instrument
MUS 1552 Functional Piano for Keyboard Principals

* Music Performance Emphasis students should take MUS 3543 Music Performance-Private Instruction IV (2 semesters) instead.

Special degree requirements. All students pursuing the Bachelor of Music degree are required:

- to make one recital appearance during the last semester of required study on their principal instrument; performance majors are required to make a minimum of one recital or area seminar appearance each semester on their principal instrument
- to perform in University ensembles; specific ensemble requirements for each emphasis or concentration are outlined in the Department of Music Student Handbook (available online and in the department office)
- to meet music performance proficiency standards established for principal instruments; students not meeting those standards must repeat music performance courses until the proficiency standards have been met
- to fulfill the recital and seminar attendance requirements as defined in the Department of Music Student Handbook.

In addition, candidates for the Bachelor of Music degree must complete the course requirements for the concentration or emphasis they declare.

Music Studies Concentration

All candidates for this concentration must fulfill the Music Degree Requirements (45 hours), as well as the course requirements necessary for this concentration (49 hours). Details regarding the following requirements for each principal instrument area are available in the Department of Music Student Handbook.

The principal instrument for those whose student teaching will be in band must be a woodwind, brass, or percussion instrument(s); for instance, traditional percussion instruments as found in a band or orchestra—timpani, mallet instruments, multi-percussion, but not drum set.

The principal instrument for those whose student teaching will be in string classes or orchestra must be violin, viola, cello, contrabass (not electric bass), or classical guitar.

The principal instrument for those whose student teaching will be in choral-elementary general music must be voice or piano.

The principal instrument for those whose student teaching will be in elementary general music-secondary instrumental must be violin, viola, cello, contrabass, guitar, woodwind, brass or traditional percussion.

A qualifying 30-minute proficiency recital must be presented on the student's principal instrument and approved prior to the semester of student teaching; specific requirements are outlined in the Department of Music Student Handbook.

A. 25 semester credit hours in music:

1. 15–17 semester credit hours of required music courses:

Wind Instrument and Percussion Principals
MUS 2413 Conducting II (Instrumental)
MUS 3232 Wind and Percussion Literature
MUS 3312 Music Technology for Music Educators
MUS 3401 Brass Instruments
MUS 3421 Vocal Techniques for Instrumental Majors
MUS 3431 Woodwind Instruments
MUS 3453 Teaching Music in the Elementary School
MUS 3471 String Instruments
MUS 3481 Percussion Instruments
MUS 4452 Marching Band Techniques

String Instrument Principals
MUS 2413 Conducting II (Instrumental)
MUS 3242 String Literature
MUS 3312 Music Technology for Music Educators
MUS 3401 Brass Instruments
MUS 3421 Vocal Techniques for Instrumental Majors
MUS 3431 Woodwind Instruments
MUS 3453 Teaching Music in the Elementary School
MUS 3471 String Instruments
MUS 3481 Percussion Instruments

Guitar Principals (Orchestral)
MUS 2413 Conducting II (Instrumental)
MUS 3312 Music Technology for Music Educators
MUS 3332 Advanced Guitar Literature
MUS 3401 Brass Instruments
MUS 3421 Vocal Techniques for Instrumental Majors
MUS 3431 Woodwind Instruments
MUS 3453 Teaching Music in the Elementary School
MUS 3471 String Instruments
MUS 3481 Percussion Instruments

Guitar Principals (Choral)
MUS 2413 Conducting II (Choral)
MUS 2601 Diction Survey
MUS 3312 Music Technology for Music Educators
MUS 3332 Advanced Guitar Literature
MUS 3453 Teaching Music in the Elementary School
MUS 3463 Teaching Vocal and General Music in Grades 6–12
MUS 3491 Instrumental Techniques for Voice Majors

Voice and Keyboard Principals
MUS 2413 Conducting II (Choral)
MUS 2601 Diction Survey
MUS 3272 Choral Literature (Renaissance to Baroque topic)
MUS 3272 Choral Literature (Classical to 20th-Century topic)
MUS 3312 Music Technology for Music Educators
MUS 3453 Teaching Music in the Elementary School
MUS 3463 Teaching Vocal and General Music in Grades 6–12
MUS 3491 Instrumental Techniques for Voice Majors

Wind and percussion students interested in teaching general music may substitute C&I 4213 Approaches to Teaching Music for MUS 4452 Marching Band Techniques. Students who choose this option will do half of their student teaching in an elementary general music placement and half in a middle school band placement. This option requires consultation with the student's music advisor.

String students interested in teaching general music may substitute C&I 4213 Approaches to Teaching Music for the two-semester MUS 1511 Music Performance-Secondary Instrument requirement (in the section below). Students who choose this option will do half of their student teaching in an elementary general music placement and half in a secondary level orchestra placement. This option requires consultation with the student's music advisor.

2. 2–4 semester credit hours of additional required music performance study:

Wind Instrument and Percussion Principals
MUS 4532 Music Pedagogy (Instrumental)

String Instrument Principals
MUS 1511 Music Performance-Secondary Instrument (violin or viola)*
MUS 1511 Music Performance-Secondary Instrument (cello or bass)
MUS 4532 Music Pedagogy (Instrumental)

Guitar Principals (Orchestral)
MUS 1511 Music Performance-Secondary Instrument (strings) (2 semesters)
MUS 4532 Music Pedagogy (Guitar)

Guitar Principals (Choral)
MUS 1511 Music Performance-Secondary Instrument (strings) (2 semesters)
MUS 4532 Music Pedagogy (Guitar)

Voice Principals
MUS 4531 Vocal Pedagogy I
MUS 4541 Vocal Pedagogy II

Keyboard Principals
MUS 1511 Music Performance-Secondary Instrument (voice) (2 semesters)

3. 6 semester credit hours of ensemble as assigned by the ensemble directors, as outlined in the Department of Music Student Handbook

* Secondary instrument must not be the same as principal instrument.

B. 24 semester credit hours of professional education courses (including 6 hours of student teaching and 3 hours in a state-mandated reading course); for specific required courses, consult the College of Education and Human Development Advising and Certification Center

C. Students electing the Music Studies concentration must successfully complete the precertification interview with the Music Studies Committee for approval to continue as a music studies major at the upper-division level

D. Students enrolled in the Music Studies concentration must successfully complete competency tests to receive certification as specified by the Texas State Board for Educator Certification

Composition Emphasis

All candidates for this emphasis must fulfill the Music Degree Requirements (45 hours), as well as the course requirements necessary for this emphasis (46 hours).

A. 10 semester credit hours of music performance courses are required, some of which may be repeated for credit:

1. 2 semester credit hours of approved secondary instrument(s)

2. 8 semester credit hours of ensemble as assigned by the ensemble directors, as outlined in the Department of Music Student Handbook

B. 8 semester credit hours of required composition lessons:

MUS 2142 Composition I
MUS 3162 Composition II
MUS 4142 Composition III (2 semesters)

C. 18 additional approved semester credit hours of upper-level music theory, history, and technology courses

D. 9 semester credit hours of electives. Students intending to pursue graduate studies in Composition or Theory are strongly encouraged to take at least two semesters of a foreign language as electives; preferred languages include German, French, or Italian. Guitar principals must elect MUS 2232 Introduction to Guitar Literature.

E. Students electing the Composition emphasis must interview with the Composition Committee for approval to pursue the emphasis at the upper-division level.

F. MUS 4561 Senior Recital is required of all students in the Composition emphasis; the student's senior recital shall include a selection of the student's compositions totaling a minimum of 30 minutes. The student will submit completed musical scores representing a majority of the proposed recital program to an examining committee the semester before that of the recital. The examining committee shall determine the acceptability of the recital program.

Music Performance Emphasis

All candidates for this emphasis must fulfill the music degree requirements (47 hours), as well as the course requirements necessary for this emphasis (44 hours).

A. 16 semester credit hours of music performance courses are required, some of which may be repeated for credit:

1. 6 semester credit hours of Private Instruction in principal instrument (this is in addition to the 14 hours of Private Instruction in the music degree requirements):

MUS 4543 Music Performance-Private Instruction V (2 semesters)

2. 2 semester credit hours of approved secondary instrument(s)

3. 8 semester credit hours of ensemble as assigned by the ensemble directors, as outlined in the Department of Music Student Handbook

B. All music performance majors except voice principals are required to complete MUS 3013 Digital Music Production

C. 6 semester credit hours of approved upper-level music theory courses

D. 4 semester credit hours of approved music literature courses in the student's principal performance area

E. 2 semester credit hours of approved music pedagogy courses in the student's principal performance area

F. For all music performance emphasis students except voice principals, 12 semester credit hours of free electives are required. Vocal Principals are required to use these 12 semester credit hours to satisfy the diction and language requirements as detailed in the Department of Music Student Handbook.

G. Students electing the Performance emphasis must be approved by the appropriate qualifying committee for approval to pursue the emphasis at the upper-division level; requirements for each area are specified in the Department of Music Student Handbook

H. A senior recital (MUS 4561) approximately one hour in length must be presented and approved by the appropriate recital committee

Music Marketing Emphasis

All candidates for this emphasis must fulfill the Music Degree Requirements (45 hours), as well as the course requirements necessary for this emphasis (46 hours).

A. 10 semester credit hours of music performance courses are required, some of which may be repeated for credit:

1. 2 semester credit hours of approved secondary instrument(s)

2. 8 semester credit hours of ensemble as assigned by the ensemble directors, as outlined in the Department of Music Student Handbook

B. 12 semester credit hours of required music marketing courses:

1. 3 semester credit hours of a music marketing introductory course:

MUS 2263 Introduction to the Music Industry
or
MUS 2273 Introduction to Music Nonprofit Organizations

2. 9 semester credit hours of required music marketing courses:

MUS 3613 Entrepreneurship in Music
MUS 4803 Seminar in Music Marketing
MUS 4933 Music Marketing Internship

C. 24 additional semester credit hours of approved business, music, music technology, or music marketing courses, at least 12 hours of which must be outside of music. Except for ACC 2013, ECO 2013, and ECO 2023, these must be upper-level courses*. A list of suggested courses (arranged in groups for different music marketing "tracks") that fulfill this part of the degree is available in the Department of Music Student Handbook.

D. 3 semester credit hours of electives for students electing ECO 2013 or ECO 2023 as a partial fulfillment of C, above. Guitar principals must elect MUS 2232 Introduction to Guitar Literature.

E. Students electing the Music Marketing emphasis must interview with the Music Marketing Committee for approval to pursue the emphasis at the upper-division level

* The College of Business sets prerequisites for all business coursework and changes prerequisites at its discretion. Business prerequisites are not necessarily included in this degree plan either as part of the academic core or the music marketing coursework. Consequently, before planning to take a specific business class, students should consult the catalog and meet with their advisor to determine whether they have met the prerequisites for that class.

Bachelor of Arts Degree in Music

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All candidates for this degree must fulfill the Core Curriculum requirements and the music degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Music must fulfill University Core Curriculum requirements in the same manner as other students. The course listed below will satisfy both degree requirements and Core Curriculum requirements; however, if this course is taken to satisfy both requirements, then students may need to take an additional course in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MUS 2243 may be used to satisfy the core requirement in Visual and Performing Arts as well as a major requirement.

Music Degree Requirements

All candidates for the Bachelor of Arts degree in Music must complete the following 30 semester credit hours of required music courses (MUS 2243 World Music in Society may also be used to satisfy Core Curriculum requirements in Visual and Performing Arts).

Music Degree Core (30 semester credit hours):

MUS 1102 Aural Skills I
MUS 1112 Basic Skills of Music I
MUS 1122 Aural Skills II

MUS 1132 Basic Skills of Music II
MUS 2001 Concert Music (2 semesters)
MUS 2102 Aural Skills III
MUS 2112 Aural Skills IV
MUS 2152 Basic Skills of Music III
MUS 2162 Basic Skills of Music IV
MUS 2243 World Music in Society
MUS 3013 Digital Music Production
MUS 3213 Music in Civilization I
MUS 3223 Music in Civilization II

In addition, candidates for the Bachelor of Arts degree in Music must complete the course requirements selected from each of the following areas:

A. 6 semester credit hours of music literature and culture selected from the following:

MUS 2263 Introduction to the Music Industry
MUS 2633 American Roots Music
MUS 2663 History and Styles of Jazz
MUS 2673 History and Styles of Rock
MUS 2693 The Music of Latin America and the Caribbean
MUS 2743 Music and Film
MUS 3263 Music Since 1900
MUS 3413 Psychology of Music
MUS 3613 Entrepreneurship in Music

B. 9 semester credit hours of music theory and analysis/technology, of which 6 semester credit hours must be at the upper-division level:

MUS 2183 Jazz Skills
MUS 2232 Introduction to Guitar Literature*
MUS 2403 Conducting I
MUS 3103 Audio Technology I
MUS 3113 Analysis of Tonal Music
MUS 3123 Introduction to Electronic and Computer Music
MUS 3133 Analysis of Twentieth-Century Music
MUS 3143 Orchestration
MUS 3163 Audio Technology II
MUS 3232 Wind and Percussion Literature
MUS 3242 String Literature
MUS 3252 Topics in Music Literature
MUS 3272 Choral Literature
MUS 3282 Vocal Literature
MUS 3292 Operatic Literature
MUS 3322 Keyboard Literature
MUS 3332 Advanced Guitar Literature
MUS 4113 Counterpoint
MUS 4153 Audio Technology III
MUS 4163 Topics in Music Theory
MUS 4183 Jazz Composition and Arranging

* Guitar principals must select MUS 2232 Introduction to Guitar Literature.

C. 10–14 semester credit hours of music performance as follows:

MUS 1521 Class Piano 1
MUS 1621 Class Piano 2
(Keyboard Principals must take MUS 1552 Functional Piano for Keyboard Principals.)

Private Instruction (4 semester credit hours)
MUS 1512 Music Performance-Private Instruction
MUS 1542 Music Performance-Private Instruction I
(Guitar Principals must take 4 semesters of private instruction, including two semesters of MUS 2542.)

Ensemble (4–8 semester credit hours)
Four semesters as assigned by the ensemble directors, to include at least two semesters of Directed Ensemble (1–2 hours per semester). Details for ensemble requirements are listed in the Department of Music Student Handbook.

D. 22–26 semester credit hours of electives, of which 6 semester credit hours must be at the upper-division level. A minimum of 12 semester credit hours must be outside music. Courses are chosen in consultation with the student's advisor.

Minor in Music

To declare a Minor in Music, students must first interview with a Music Department advisor.

All students pursuing the Minor in Music must complete 21 semester credit hours. Students with little or no prior experience with music performance or notation should take MUS 2623 Fundamentals of Music for the Non-Music Major before declaring the music minor and enrolling in MUS 1102 and MUS 1112.

A. 8 semester credit hours of music theory courses:

MUS 1102 Aural Skills I
MUS 1112 Basic Skills of Music I
MUS 1122 Aural Skills II
MUS 1132 Basic Skills of Music II

B. 3 semester credit hours of lower-division music studies selected from the following:

MUS 1521 Class Piano 1
MUS 1531 Class Voice
MUS 1621 Class Piano 2
MUS 2243 World Music in Society
MUS 2263 Introduction to the Music Industry
MUS 2403 Conducting I
MUS 2603 Beginning Guitar
MUS 2613 Intermediate Guitar
MUS 2633 American Roots Music
MUS 2663 History and Styles of Jazz
MUS 2673 History and Styles of Rock
MUS 2683 Masterpieces of Music
MUS 2693 The Music of Latin America and the Caribbean
MUS 2703 History and Traditions of Mariachi Music
MUS 2743 Music and Film
MUS 2753 American Musical Theater

C. 6 semester credit hours of upper-division music studies selected from the following:

MUS	3013	Digital Music Production
MUS	3103	Audio Technology I
MUS	3123	Introduction to Electronic and Computer Music
MUS	3523	Music and the Internet
MUS	3613	Entrepreneurship in Music

D. Two semesters (a minimum of 2 semester credit hours) of Music Ensemble, as assigned

E. 2 semester credit hours of MUS 2001 Concert Music

Certificate in Jazz Studies

The Certificate in Jazz Studies is intended for music majors who have an interest in jazz performance, improvisation and arranging, and who are pursuing an undergraduate degree in music. The Certificate is granted upon graduation from the University.

Students pursuing the Certificate in Jazz Studies must complete a minimum of 16 semester credit hours, including the following courses:

MUS	2132	Introduction to Improvisation
MUS	2183	Jazz Skills
MUS	2663	History and Styles of Jazz
MUS	3583	Advanced Improvisation
MUS	3771	Jazz Ensemble (1 hour per semester, may be repeated for credit)
MUS	4183	Jazz Composition and Arranging
MUS	4581	Chamber Music (jazz combo) (1 hour per semester, may be repeated for credit)

Certificate in Music Technology

The Certificate in Music Technology is designed primarily for UTSA students who have an active interest in music technology and are currently pursuing an undergraduate or graduate degree in any UTSA discipline. Students in disciplines outside of music will be accepted into the program with approval from the program director. The Certificate is granted upon graduation from the University.

Students can declare their intention to participate in the certificate program at any time before or during the first two courses, MUS 3013 Digital Music Production or MUS 3103 Audio Technology I. Acceptance is provisional. Exemplary performance in these two courses is required to continue with full acceptance in the upper level of the program. At that point, certificate students begin to receive more individualized training and attention in the remaining courses.

All students pursuing the Certificate in Music Technology must complete the following 16 semester credit hours. Substitutions must be approved by the Music Technology Committee.

MUS	3013	Digital Music Production
MUS	3103	Audio Technology I
MUS	3123	Introduction to Electronic and Computer Music
MUS	3163	Audio Technology II
MUS	4433	Multimedia Production
MUS	4961	Music Technology Project

DEPARTMENT OF PHILOSOPHY AND CLASSICS

The department offers two Bachelor of Arts degrees, one in Classical Studies and Humanities, and the other in Philosophy; minors are offered in Classical Studies, Humanities, Philosophy, and Religious Studies. Honors can also be earned in Classical Studies and Humanities, and Philosophy.

Honors in Classical Studies and Humanities

Students whose grade point average in the Classical Studies and Humanities major before the beginning of their final year at UTSA is 3.25 or above, and whose overall grade point average is 3.0, may earn Honors in Classical Studies and Humanities. To do so, a student must complete a substantial paper approved by the Department Scholarship and Honors Committee and maintain a 3.25 grade point average in the major. The grade point average requirements apply to all transfer work as well as all courses taken at UTSA.

Bachelor of Arts Degree in Classical Studies and Humanities

The Bachelor of Arts degree in Classical Studies and Humanities is an interdisciplinary degree program that provides students with a foundation in the history of humanities disciplines and affords the opportunity to focus on particular periods and intellectual trends. In completing the degree, students must declare either a Classical Studies emphasis, which focuses on the language, literature and culture of ancient Greece and Rome as foundational to humanistic studies, or a general Humanities emphasis, which offers a synoptic view of the history of ideas and the opportunity to study the reception of these traditions within a broader range of historical periods. The minimum number of semester credit hours required for this degree is 120, including the hours of the Core Curriculum requirements. For either emphasis, 39 of the total semester credit hours required for the degree must be at the upper-division level (3000- and 4000-level), 18 of which must be earned in upper-division UTSA courses.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Classical Studies and Humanities must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

Degree Requirements

A. Common Core (12 semester credit hours):

CLA	2013	Introduction to Ancient Greece
CLA	2023	Introduction to Ancient Rome
PHI	2023	Introduction to Ancient Philosophy

CLA 4973 Seminar for Classics Majors
or
HUM 4973 Seminar for Humanities Majors

B. Language Component (6–8 semester credit hours):

Classical Studies Emphasis:

GRK 1114 Introductory Classical Greek I
or
LAT 1114 Introductory Latin I (or equivalent)

GRK 1124 Introductory Classical Greek II
or
LAT 1124 Introductory Latin II (or equivalent)

Humanities Emphasis:

6 semester hours in a language other than English

C. Discipline Core (18 semester credit hours):

Classical Studies Emphasis:

GRK 2113 Intermediate Classical Greek I
or
LAT 2113 Intermediate Latin I (or equivalent)

And

15 semester credit hours of prescribed electives from the following list (three courses must be 3000-level or higher):

CLA 2033 Introduction to Classical Literature
CLA 2323 Classical Mythology
CLA 2953 Topics for the Study of the Ancient Mediterranean
CLA 3023 Classical Myths and Literature
CLA 3053 Topics in Classical Genres
CLA 3063 Topics in the Art and Architecture of the Classical World
CLA 3123 Cultural Issues in Classical Antiquity
CLA 3513 Topics in Classical History
CLA 4913 Independent Study
CLA 4953 Special Studies in Classics
FL 3043 Individualized Instruction in Advanced-Level Language (Provided the instruction is in Latin or Greek; may be repeated as often as subject matter varies.)
HUM 2093 World Religions
HUM 3023 The Medieval World
HUM 3043 Classicism and Enlightenment

Humanities Emphasis:

HUM 2093 World Religions
HUM 3013 History of Ideas

And

12 semester credit hours in approved historical periods selected from the following:

CLA 3123 Cultural Issues in Classical Antiquity
CLA 3513 Topics in Classical History
HUM 3023 The Medieval World
HUM 3033 Renaissance Ideas
HUM 3043 Classicism and Enlightenment
HUM 3053 The Romantic Age
HUM 3063 The Modern World

D. Advanced Support Work (12 semester credit hours):

Classical Studies Emphasis:

12 semester credit hours of approved support work. Support work may be drawn from upper-division (3000- or 4000-level) courses listed in ANT, ARC, CLA, COM, CSH, ENG, GRK, HIS, HUM, MUS, PHI or any foreign language of the Department of Modern Languages and Literatures in the *UTSA 2012–2014 Undergraduate Catalog*.

Humanities Emphasis:

12 semester credit hours that should form an interdisciplinary course of study developed in conjunction with the undergraduate advisor and designed to aid the student's integration of his or her program in terms of central themes, focal problems, or fields of historical interest; at least 9 hours must be at the upper-division level.

The student must take at least 3 semester credit hours in each of the following four areas: Classical studies (CLA), philosophy (PHI), humanities (HUM), and literature in one of the following languages: English, French, German, Greek, Italian, Latin, Spanish, or Russian (this includes literature courses in translation, and culture and civilization courses).

E. Electives (28–30 semester credit hours)

Course Sequence Guide for B.A. Degree in Classical Studies and Humanities – Classical Studies Emphasis

This course sequence guide is designed to assist students in completing their UTSA undergraduate Classical Studies and Humanities degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Classical Studies and Humanities, Classical Studies Emphasis – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
HIS 1043, 1053, or 2053 (core)	3
LAT 1114 or GRK 1114 (level I)	4
WRC 1013 (core)	3
Mathematics core	3
Natural Sciences Level I core	3
Total semester hours	*16*

Courses	Credit Hours
Spring	
HIS 1043, 1053, or 2053 (core)	3
LAT 1124 or GRK 1124 (level II)	4
WRC 1023 (core)	3
Natural Sciences Level II core	3
Social & Behavioral Science core	3
Total semester hours	*16*

SOPHOMORE YEAR

Fall	
CLA 2013	3
ECO 2003, 2013, or 2023 (core)	3
POL 1013 (core)	3
Free elective	3
Literature core	3
Total semester hours	*15*
Spring	
CLA 2023	3
PHI 2023	3
POL 1133 or 1213 (core)	3
Free elective	3
Visual & Performing Arts core	3
Total semester hours	*15*

JUNIOR YEAR

Fall	
LAT 2113 or GRK 2113	3
Upper-division CLA, HUM, or FL elective	3
Upper-division free elective	3
Upper-division support work	3
World Society & Issues core	3
Total semester hours	*15*
Spring	
CLA, HUM, or FL elective	3
CLA, HUM, or FL elective	3
Free elective	3
Upper-division free elective	3
Upper-division support work	3
Total semester hours	*15*

SENIOR YEAR

Fall	
Free elective	3
Upper-division CLA, HUM, or FL elective	3
Upper-division CLA, HUM, or FL elective	3
Upper-division free elective	3
Upper-division support work	3
Total semester hours	*15*

Courses	Credit Hours
Spring	
CLA 4973	3
Free elective	1
Upper-division free elective	3
Upper-division free elective	3
Upper-division support work	3
Total semester hours	*13*

Course Sequence Guide for B.A. Degree in Classical Studies and Humanities – Humanities Emphasis

This course sequence guide is designed to assist students in completing their UTSA undergraduate Classical Studies and Humanities degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Classical Studies and Humanities, Humanities Emphasis – Four-Year Academic Plan

Course	Credit Hours
FRESHMAN YEAR	
Fall	
HIS 1043, 1053, or 2053 (core)	3
WRC 1013 (core)	3
Foreign language (semester I)	3 or 4
Mathematics core	3
Natural Sciences Level I core	3
Total semester hours	*15 or 16*
Spring	
HIS 1043, 1053, or 2053 (core)	3
WRC 1023 (core)	3
Foreign language (semester II)	3 or 4
Social & Behavioral Science core	3
Natural Sciences Level II core	3
Total semester hours	*15 or 16*

SOPHOMORE YEAR

Fall	
CLA 2013	3
HUM 2093	3
HUM 3023–3063, CLA 3123, or CLA 3513	3
POL 1013 (core)	3
Literature core	3
Total semester hours	*15*

Course	Credit Hours
Spring	
CLA 2023	3
HUM 3013	3
HUM 3023–3063, CLA 3123, or CLA 3513	3
POL 1133 or 1213 (core)	3
Visual & Performing Arts core	3
Total semester hours	*15*

JUNIOR YEAR

Fall	
ECO 2003, 2013, or 2023 (core)	3
HUM 3023–3063, CLA 3123, or CLA 3513	3
PHI 2023	3
Free elective	3
Upper-division free elective	3
Total semester hours	*15*
Spring	
CLA, PHI, HUM, or Literature elective*	3
CLA, PHI, HUM, or Literature elective*	3
Free elective	3
Upper-division free elective	3
World Society & Issues core	3
Total semester hours	*15*

SENIOR YEAR

Fall	
HUM 3023–3063, CLA 3123, or CLA 3513	3
CLA, PHI, HUM, or Literature elective*	3
Free elective	3
Upper-division free elective	3
Upper-division free elective	3
Total semester hours	*15*
Spring	
HUM 4973	3
CLA, PHI, HUM, or Literature elective*	3
Free elective	3
Free elective (to meet 120 hour minimum)	1 or 3
Upper-division free elective	3
Total semester hours	*13 or 15*

* 9 of these hours must be upper-division.

Minor in Classical Studies

All students pursuing the minor in Classical Studies must complete 21 semester credit hours.

A. Successful completion of LAT 2113 (Intermediate Latin I) or GRK 2113 (Intermediate Classical Greek I) or the equivalent

B. 9 semester credit hours of required courses:

CLA 2013 Introduction to Ancient Greece
CLA 2023 Introduction to Ancient Rome
CLA 2033 Introduction to Classical Literature

C. 9 additional semester credit hours of coursework in Classics, Greek, or Latin (including Latin study in FL 3043), 6 hours of which must be at the upper-division level. 3 hours may be from a 2000-level Greek or 2000-level Latin (including Latin study in FL 2043).

Minor in Humanities

All students pursuing the Minor in Humanities must complete 21 semester credit hours.

A. HUM 3013 History of Ideas

B. 9 semester credit hours of background courses, with 3 hours selected from each of the three following groups:

1. AHC 1113 Survey of Art and Architecture from Prehistoric Times to 1350
   AHC 1123 Survey of Art and Architecture in Europe and the New World from 1350 to 1750
   AHC 1133 Survey of Modern Art

2. CLA 2013 Introduction to Ancient Greece
   CLA 2023 Introduction to Ancient Rome
   CLA 2033 Introduction to Classical Literature

3. PHI 2013 Basic Philosophical Problems
   PHI 2023 Introduction to Ancient Philosophy
   PHI 2033 Introduction to Early Modern Philosophy

C. 9 additional semester credit hours of upper-division coursework in Humanities

Minor in Religious Studies

All students pursuing the Minor in Religious Studies must complete 21 semester credit hours.

A. 18 semester credit hours of required courses:

1. HUM 2093 World Religions
   PHI 3013 Philosophy of Religion

2. 6 semester credit hours selected from the following:

   HIS 2543 Introduction to Islamic Civilization
   HUM 3213 The Christian Classics
   PHI 3073 Asian Philosophy

3. 6 semester credit hours selected from the following:

   ANT 3133 Ritual and Symbol
   HUM 3223 The Bible as Literature
   SOC 3093 Religion and Society

B. 3 additional upper-division semester credit hours of religious studies selected from the following:

CLA 3123 Cultural Issues in Classical Antiquity
HUM 4973 Seminar for Humanities Majors
PHI 4973 Seminar for Philosophy Majors

Honors in Philosophy

Students whose grade point average in the philosophy major before the beginning of their final year at UTSA is 3.25 or above, and whose overall grade point average is 3.0, may earn Honors in Philosophy. To do so, a student must complete a substantial paper approved by the Department Scholarship and Honors Committee and maintain a 3.25 grade point average in the major. The grade point average requirements apply to all transfer work as well as all courses taken at UTSA.

Bachelor of Arts Degree in Philosophy

The minimum number of semester credit hours required for this degree is 120, including the hours of the Core Curriculum requirements. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Philosophy must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

Note: If a language is used to satisfy the three-hour World Society and Issues core requirement, students will need to take an additional three hours in the same language for the degree requirement.

Degree Requirements

A. 33 semester credit hours:

PHI	2013	Basic Philosophical Problems
PHI	2023	Introduction to Ancient Philosophy
PHI	2033	Introduction to Early Modern Philosophy
PHI	2043	Introductory Logic
PHI	3213	Ethics
PHI	3223	Approaches to Knowledge and Reality
PHI	4973	Seminar for Philosophy Majors

12 additional upper-division semester credit hours of philosophy electives, at least 6 of which must be at the 4000 level, is required for all Philosophy majors.

B. 6 semester credit hours in a single language other than English

C. 12 semester credit hours of approved support work, at least 6 hours of which must be at the upper-division level, in one of the following categories:

- mathematics and natural sciences: computer science (CS), mathematics (MAT), statistics (STA), chemistry (CHE), geology (GEO), physics (PHY), astronomy (AST), and biology (BIO)
- social and behavioral sciences: American studies (AMS), anthropology (ANT), history (HIS), psychology (PSY), economics (ECO), political science (POL), and sociology (SOC)
- language, literature, and humanities: English (ENG), humanities (HUM), classical studies (CLA), communication (COM), comparative studies in the humanities (CSH), linguistics (LNG), and foreign languages
- history and theory of art and music: art history and criticism (AHC) and music (MUS)
- other subjects as may be individually justified by the student and approved by the undergraduate advisor.

D. 27 semester credit hours of electives

Course Sequence Guide for B.A. Degree in Philosophy

This course sequence guide is designed to assist students in completing their UTSA undergraduate Philosophy degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Philosophy – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
WRC 1013 (core)	3
HIS 1043, 1053, or 2053 (core)	3
Foreign language (semester I)	3 or 4
Mathematics core	3
Natural Sciences Level I core	3
Total semester hours	*15 or 16*
Spring	
WRC 1023 (core)	3
HIS 1043, 1053, or 2053 (core)	3
Foreign language (semester II)	3 or 4
Social & Behavioral Science core	3
Natural Sciences Level II core	3
Total semester hours	*15 or 16*
SOPHOMORE YEAR	
Fall	
PHI 2013	3
PHI 2023	3
POL 1013 (core)	3
Literature core	3
Support work	3
Total semester hours	*15*
Spring	
PHI 2033	3
PHI 2043	3
POL 1133 or 1213 (core)	3
Support work	3
Visual & Performing Arts core	3
Total semester hours	*15*

Courses	Credit Hours
JUNIOR YEAR	
Fall	
ECO 2023, 2013, or 2023 (core)	3
PHI 3213	3
Upper-division PHI elective	3
Upper-division support work	3
World Society & Issues core	3
Total semester hours	*15*
Spring	
PHI 3223	3
Free elective	3
Upper-division free elective	3
Upper-division PHI elective	3
Upper-division support work	3
Total semester hours	*15*
SENIOR YEAR	
Fall	
PHI 4000-level elective	3
Free elective	3
Free elective	3
Upper-division free elective	3
Upper-division free elective	3
Total semester hours	*15*
Spring	
PHI 4973	3
PHI 4000-level elective	3
Free elective	3
Free elective (to meet 120 hour minimum)	1 or 3
Upper-division free elective	3
Total semester hours	*13 or 15*

Minor in Philosophy

All students pursuing the Minor in Philosophy must complete 21 semester credit hours.

A. 18 semester credit hours of required courses:

PHI	2013	Basic Philosophical Problems
PHI	2023	Introduction to Ancient Philosophy
PHI	2033	Introduction to Early Modern Philosophy
PHI	2043	Introductory Logic
PHI	3213	Ethics
PHI	3223	Approaches to Knowledge and Reality

B. 3 additional upper-division semester credit hours in Philosophy

DEPARTMENT OF POLITICAL SCIENCE AND GEOGRAPHY

The Department of Political Science and Geography offers Bachelor of Arts degrees in Geography and in Political Science. The Department also offers Minors in Geography, Political Science, Global Analysis, International Studies, Latin American Studies, Legal Studies, and Public Administration.

Department Honors and Signature Experience

The Honors Program of the Department of Political Science and Geography is an opportunity for advanced study for students who have demonstrated commendable academic performance. The prerequisites for a student's participation in the Honors Program are a minimum grade point average of 3.0 at UTSA, a 3.5 grade point average in the major, and recommendation by a member of the Political Science and Geography faculty. Students who are approved will enroll in the appropriate honors thesis courses during their final two semesters at UTSA. To earn honors, the thesis must be passed by an Honors Committee that will be formed with the recommending faculty and another faculty member. Students interested in the Honors Program should contact their faculty advisor for additional information.

As part of the College of Liberal and Fine Arts Signature Experience, which seeks to offer students opportunities to apply ideas and knowledge in real-world settings, the Department encourages students to take advantage of the Internship, Independent Study, Advanced Research Tutorial, and Research Practicum. Majors may apply 3 or 6 semester credit hours of internship study to their baccalaureate program. Internships entail supervised workplace experience, allowing the integration of academic and practitioner learning. The internship coordinator of the Department of Political Science and Geography oversees placement. Department faculty members provide supervision and grade internship performance. Students majoring in nonsocial science disciplines are welcome to participate but should consult with their faculty advisors regarding the role of the internship within their own degree programs. Further information can be obtained from the internship coordinator.

Independent Studies are arranged with Department faculty and normally cover topics that are not presented in listed courses. Advanced students, nominated by a faculty member, may enroll in a Research Tutorial, which provides a student with the opportunity to collaborate, one on one, with a faculty member in the conduct of scholarly research. The Research Practicum enables students to focus on an applied research project that makes a contribution to the discovery or resolution of community needs.

Bachelor of Arts Degree in Geography

The minimum number of semester credit hours required for the Bachelor of Arts degree in Geography, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level. At least 33 semester credit hours of geography coursework are required to fulfill the geography major. The 33-hour total is considered a minimum, and students are encouraged to deepen and broaden their grasp of their major through careful allocation of their elective semester credit hours. Students are required to complete at

least 6 semester credit hours of support work. These courses, which require advance approval from advisors, should serve to introduce students to other social sciences in addition to those entailed in the coursework within students' major discipline.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Geography must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

Degree Requirements

A. 34 semester credit hours in the major, 24 of which must be at the upper-division level:

1. 19 semester credit hours:

   13 required semester credit hours:

   GRG 2613 Physical Geography
   GRG 2623 Human Geography
   GRG 3314 Introduction to Geographic Information Systems
   GRG 3323 Spatial Analysis

   6 additional semester credit hours selected from the following:

   GRG 3113 Geography of the United States and Canada
   GRG 3123 Geography of Latin America
   GRG 3133 Geography of Europe
   GRG 3143 Geography of Mexico
   GRG 3153 Geography of Texas
   GRG 3423 Geopolitics of Russia and Eurasia
   GRG 3433 The Geography and Politics of the Asian Rim

2. 15 additional semester credit hours of geography electives chosen in consultation with the student's advisor. A maximum of 6 of these hours, as approved by the student's advisor, may be applied to the major from selected courses in the following three areas:

   urban and economic studies
   international studies
   earth science and resources

B. 6 semester credit hours of courses in the social sciences outside the major, chosen with the consent of the advisor

C. 6 semester credit hours of a single language other than English

D. 32 semester credit hours of electives

Course Sequence Guide for B.A. Degree in Geography

This course sequence guide is designed to assist students in completing their UTSA undergraduate Geography degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Geography – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
HIS 1043, 1053, or 2053 (core)	3
POL 1013 (core)	3
WRC 1013 (core)	3
Free elective	3
Natural Sciences Level I core	3
Total semester hours	*15*
Spring	
HIS 1043, 1053, or 2053 (core)	3
POL 1133 or 1213 (core)	3
WRC 1023 (core)	3
Free elective	3
Natural Sciences Level II core	3
Total semester hours	*15*
SOPHOMORE YEAR	
Fall	
ECO 2003, 2013, or 2023 (core)	3
GRG 2623	3
Social & Behavioral Science core	3
Support work	3
Visual & Performing Arts core	3
Total semester hours	*15*
Spring	
GRG 2613	3
Literature core	3
Mathematics core	3
Support work	3
World Society & Issues core	3
Total semester hours	*15*
JUNIOR YEAR	
Fall	
GRG 3113–3153, 3423, or 3433	3
Foreign language (semester I)	3 or 4
Free elective	3
Upper-division free elective	3
Upper-division GRG elective	3
Total semester hours	*15 or 16*

Courses	Credit Hours
Spring	
GRG 3113–3153, 3423, or 3433	3
GRG 3323	3
Foreign language (semester II)	3 or 4
Free elective	3
Upper division GRG elective	3
Total semester hours	*15 or 16*
SENIOR YEAR	
Fall	
GRG 3314	4
Free elective	3
Upper-division free elective	3
Upper-division free elective	3
Upper-division GRG elective	3
Total semester hours	*16*
Spring	
GRG elective	3
Free elective (to meet 120 hour minimum)	0 to 2
Upper-division free elective	3
Upper-division free elective	3
Upper-division GRG elective	3
Total semester hours	*12 to 14*

Minor in Geography

All students pursuing the Minor in Geography must complete 18 semester credit hours.

A. 6 semester credit hours of courses in core concepts and regions:

GRG 1013 Fundamentals of Geography
GRG 1023 World Regional Geography

B. 3 semester credit hours of upper-division regional geography selected from the following:

GRG 3113 Geography of the United States and Canada
GRG 3123 Geography of Latin America
GRG 3133 Geography of Europe
GRG 3143 Geography of Mexico
GRG 3153 Geography of Texas

C. 9 semester credit hours of upper-division electives in geography

To declare a Minor in Geography, obtain advice, or seek approval of substitutions for course requirements, students should consult the College of Liberal and Fine Arts Advising Center.

Bachelor of Arts Degree in Political Science

The minimum number of semester credit hours required for the Bachelor of Arts degree in Political Science, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level. At least 33 semester credit hours of political science coursework are required to fulfill the political science major. The 33-hour total is considered a minimum, and students are encouraged to deepen and broaden their grasp of their major through careful allocation of their elective semester credit hours. Students are required to complete at least 6 semester credit hours of support work. These courses, which require advance approval from advisors, should serve to introduce students to other social sciences.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Political Science must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

Degree Requirements

A. 33 semester credit hours in the major, 21 hours of which must be at the upper-division level. Internships cannot be applied to the 21 hours of required upper-division coursework. Courses must be selected in the following manner:

1. 6 semester credit hours of courses selected from the following:

   POL 2503 Introduction to Political Theory
   POL 2513 Public Administration and Public Policy
   POL 2533 Introduction to Political Science
   POL 2603 International Politics
   POL 2623 Law and Society
   POL 2633 Comparative Politics

2. 3 semester credit hours:

   POL 2703 Scope and Methods in Political Science

3. 21 semester credit hours of political science electives, 18 hours of which must be at the upper-division level, with at least 3 hours in each of the following subfields (see list of courses by subfield following the description of the political science minor):

   American politics
   Comparative politics
   International politics
   Political theory
   Public administration or public law

4. One senior-level seminar selected from the following:

   POL 4153 Seminar in Jurisprudence
   POL 4973 Seminar in Political Science

B. 6 semester credit hours of courses in the social sciences outside the major, chosen with consent of the advisor

C. 6 semester credit hours of a single language other than English

D. 33 semester credit hours of electives

Course Sequence Guide for B.A. Degree in Political Science

This course sequence guide is designed to assist students in completing their UTSA undergraduate Political Science degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Political Science – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
HIS 1043, 1053, or 2053 (core)	3
POL 1013 (core)	3
WRC 1013 (core)	3
Mathematics core	3
Social & Behavioral Science core	3
Total semester hours	*15*
Spring	
HIS 1043, 1053, or 2053 (core)	3
POL 1133 or 1213 (core)	3
WRC 1023 (core)	3
Free elective	3
Natural Sciences Level I core	3
Total semester hours	*15*
SOPHOMORE YEAR	
Fall	
ECO 2003, 2013, or 2023 (core)	3
POL 2503–2633	3
POL 2703	3
Natural Sciences Level II core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Spring	
POL 2503–2633	3
Free elective	3
Literature core	3
World Society & Issues core	3
Total semester hours	*15*
JUNIOR YEAR	
Fall	
Foreign language (semester I)	3 or 4
Free elective	3
Support work	3
Upper-division free elective	3
Upper division POL - American	3
Total semester hours	*15 or 16*
Spring	
Foreign language (semester II)	3 or 4
POL elective	3
Support work	3
Upper-division free elective	3
Upper-division POL - Comparative	3
Total semester hours	*15 or 16*
SENIOR YEAR	
Fall	
Upper-division free elective	3
Upper-division free elective	3
Upper-division POL elective	3
Upper-division POL - International	3
Upper-division POL - Political Theory	3
Total semester hours	*15*
Spring	
POL 4153 or 4973	3
Free elective (to meet 120 hour minimum)	1 or 3
Upper-division free elective	3
Upper-division free elective	3
Upper-division POL - Public Administration/Law	3
Total semester hours	*13 or 15*

Minor in Political Science

All students pursuing the Minor in Political Science must complete 18 semester credit hours, 12 hours of which must be upper-division.

A. 6 semester credit hours of lower-division courses selected from the following:

   POL 2503 Introduction to Political Theory
   POL 2513 Public Administration and Public Policy
   POL 2533 Introduction to Political Science
   POL 2603 International Politics
   POL 2623 Law and Society
   POL 2633 Comparative Politics
   POL 2703 Scope and Methods in Political Science

B. 12 upper-division semester credit hours. Students must take at least one upper-division class in three of the six subfields (see list of courses by subfield below):

Subfields in Political Science:

American Politics
POL 3073 African American Politics
POL 3083 Race and Ethnic Politics in the United States
POL 3093 Mexican American Politics
POL 3123 Political Psychology
POL 3183 Women in Politics
POL 3234 Political Campaigns and Elections
POL 3244 Mass Media and Public Opinion
POL 3253 Participation and American National Elections
POL 3283 The American Presidency
POL 3293 Political Movements
POL 3303 Race, Ethnicity and Public Policy
POL 3363 Political Parties and Interest Groups
POL 3373 The Legislative Process
POL 3413 The Politics of Urban Development
POL 3573 Politics of the Contemporary City
POL 3743 Film in Politics
POL 3753 Latino/a Politics
POL 3813 Political Polling
POL 3823 Politics of Congressional Elections

Comparative Politics
POL 3063 Comparative Political Participation
POL 3213 Business and Politics in the Third World
POL 3273 Introduction to Global Analysis (same as GLA 3013)
POL 3353 Leadership and Elites
POL 3393 Latin American Politics
POL 3403 European Politics
POL 3423 Geopolitics of Russia and Eurasia
POL 3433 Governments and Politics of Southeast Asia
POL 3443 Governments and Politics of East Asia
POL 3453 The Politics of Mexico
POL 3463 Politics of the Third World
POL 3473 Theories and Problems in Latin American Politics
POL 3493 Politics of the Middle East
POL 3553 Social Policy in Modern Welfare States
POL 3633 Political Economy
POL 3783 Comparative Democratization
POL 4023 Techniques in Global Analysis (same as GLA 4123)

International Politics
POL 3033 International Governance
POL 3043 Human Rights
POL 3053 United States–Latin American Relations
POL 3273 Introduction to Global Analysis (same as GLA 3013)
POL 3383 East European Politics
POL 3483 International Political Economy
POL 3503 American Foreign Policy since World War II
POL 3513 International Organizations
POL 3523 Force in International Politics
POL 3563 Current Issues in World Politics
POL 3763 Globalization
POL 4003 Comparative Foreign Policy
POL 4023 Techniques in Global Analysis (same as GLA 4123)
POL 4103 Latin America and the World
POL 4143 The European Union

Political Theory
POL 3103 Political Ideology
POL 3113 American Political Theory
POL 3133 Political Philosophy: Ancient and Medieval
POL 3143 Political Philosophy: Modern
POL 3153 Political Philosophy: Contemporary
POL 3163 Introduction to Feminist Theory
POL 3193 Theories of Citizenship
POL 3203 African American Political Thought

Public Administration
POL 3413 The Politics of Urban Development
POL 3603 Public Policy Formulation and Implementation
POL 3613 Public Budgeting and Taxation
POL 3623 Public Policy Evaluation
POL 3703 Personnel Administration in the Public Sector
POL 4323 Administrative Law

Public Law
POL 3013 The American Legal Process
POL 3023 Civil Liberties in American Law and Practice
POL 3223 Judicial Politics
POL 3323 Constitutional Law
POL 4123 Legal and Philosophical Reasoning
POL 4153 Seminar in Jurisprudence
POL 4323 Administrative Law

Internship hours cannot count toward the minor.

To declare a Minor in Political Science, obtain advice, or seek approval of substitutions for course requirements, students should consult the College of Liberal and Fine Arts Advising Center.

Minor in Global Analysis

All students pursuing a Minor in Global Analysis must complete 21 semester credit hours, at least 12 of which must be at the upper-division level (3000- or 4000-level courses).

A. 3 semester credit hours selected from the following international perspectives on global analysis courses:

GLA 3013 Introduction to Global Analysis (same as POL 3273)
POL 2603 International Politics
POL 2633 Comparative Politics
POL 3503 American Foreign Policy since World War II

B. 6 semester credit hours selected from the following research methods courses:

One of the five following courses:

ECO 3123 Introduction to Econometrics and Business Forecasting
GRG 3323 Spatial Analysis
HIS 2003 Historical Methods

POL 2703 Scope and Methods in Political Science
SOC 3393 Quantitative Research Methods

AND

GLA 4123 Techniques in Global Analysis (same as POL 4023)

C. 12 semester credit hours selected from the following courses:

1. 3 semester credit hours of foreign affairs and security policy selected from the following courses:

   ECO 4303 Economics of Developing Countries
   GLA 4203 Current Topics in Global Analysis (same as POL 4203)
   HIS 3823 History of American Foreign Relations
   POL 3503 American Foreign Policy since World War II
   POL 3523 Force in International Politics
   POL 4003 Comparative Foreign Policy

2. 3 semester credit hours of global conditions and issues selected from the following courses:

   AMS 3243 Studies in Transnationalism
   ECO 3193 International Economics
   FIN 4613 Introduction to International Finance
   GRG 3633 Geography of Development
   GRG 3643 Political Geography
   HIS 3423 United States–Mexico Border
   HIS 3843 Migration and History
   POL 3063 Comparative Political Participation
   POL 3213 Business and Politics in the Third World
   POL 3463 Politics of the Third World
   POL 3483 International Political Economy
   POL 3563 Current Issues in World Politics

3. 3 semester credit hours of analytical tools selected from the following courses:

   GLA 4013 The Intelligence Community and World Affairs (same as POL 4013)
   GRG 3314 Introduction to Geographic Information Systems
   GRG 4313 Remote Sensing
   HUM 3623 Topics in National Cultures and Civilizations
   IS 3003 Principles of Information Systems for Management
   PHI 4113 Contemporary Analytic Philosophy
   POL 3103 Political Ideology
   POL 3123 Political Psychology
   SOC 3373 Qualitative Research Methods

4. 3 semester credit hours of organizations, politics, and regional analysis selected from the following courses:

   COM 3553 Intercultural Communication
   COM 3563 International Communication
   GLA 4013 The Intelligence Community and World Affairs
   GRG 3133 Geography of Europe
   MKT 4073 International Marketing
   POL 3033 International Governance
   POL 3043 Human Rights
   POL 3053 United States–Latin American Relations
   POL 3283 The American Presidency
   POL 3393 Latin American Politics
   POL 3403 European Politics
   POL 3423 Geopolitics of Russia and Eurasia
   POL 3433 Governments and Politics of Southeast Asia
   POL 3443 Governments and Politics of East Asia
   POL 3473 Theories and Problems in Latin American Politics
   POL 3493 Politics of the Middle East
   POL 3513 International Organizations
   POL 4103 Latin America and the World
   PSY 3053 Cross-Cultural Psychology
   SOC 4433 Culture and Society

No more than 6 semester credit hours selected from the following courses may be substituted for organized courses under section C with approval of the student's advisor and Department Chair:

GLA 4913 Independent Study in Global Analysis
GLA 4933 Internship in Global Analysis
GRG 4913 Independent Study
GRG 4933 Internship in Geography
POL 4913 Independent Study
POL 4933 Internship in Political Science

Requests for substitutions require pre-approval of the student's advisor, the supervising faculty member, and the Department Chair.

To declare a Minor in Global Analysis, obtain advice, or seek approval of substitutions for course requirements, students should consult with the College of Liberal and Fine Arts Undergraduate Advising Center.

Minor in International Studies

The Minor in International Studies offers students the opportunity to combine a major in a standard discipline with an interdisciplinary examination of the contexts and structures of relationships among nations.

All students pursuing a Minor in International Studies must complete 18 semester credit hours.

A. 3 semester credit hours selected from the following:

   INS 2403 Introduction to International Study
   POL 2533 Introduction to Political Science
   POL 2603 International Politics

B. 15 semester credit hours; 12 hours of which must be at the upper-division level, and one course must be taken from three of the four different categories below:

   1. Geography or History:

      GRG 1023 World Regional Geography
      GRG 3113 Geography of the United States and Canada
      GRG 3143 Geography of Mexico
      GRG 3213 Cultural Geography

GRG	3423	Geopolitics of Russia and Eurasia
GRG	3433	The Geography and Politics of the Asian Rim
GRG	3533	Geography of Economic Activity
GRG	3613	Conservation of Resources
GRG	3633	Geography of Development
HIS	2533	Introduction to Latin American Civilization
HIS	2543	Introduction to Islamic Civilization
HIS	2553	Introduction to East Asian Civilization
HIS	2563	Introduction to European Civilization
HIS	2573	Introduction to African Civilization
HIS	2583	Introduction to South Asian Civilization
HIS	3243	Europe in the Nineteenth Century
HIS	3283	Twentieth-Century Europe
HIS	3303	History of Mexico
HIS	3353	Latin America since Independence
HIS	3373	Revolution in Latin America
HIS	3523	European Cultural History
HIS	3603	Occupation, Revolution and Nation in Africa
HIS	3613	Migration, Society and Culture in Africa
HIS	3643	Modern Spain
HIS	3753	The Soviet Union and After
HIS	3823	History of American Foreign Relations
HIS	3943	History of India
IDS	2213	World Civilization since the Fifteenth Century

2. Economics, Finance or Marketing International Business:

ECO	3193	International Economics
ECO	4303	Economics of Developing Countries
FIN	4613	Introduction to International Finance
MGT	4073	International Management
MGT	4083	Comparative International Management Practices
MKT	4073	International Marketing

3. Humanities, Intercultural Communication and Fine Arts:

AHC	1123	Survey of Art and Architecture in Europe and the New World from 1350 to 1750
AHC	1133	Survey of Modern Art
AHC	3113	Contemporary Art
AHC	3423	Arts of Ancient America
ARC	2413	History of Architecture: Prehistory through Medieval
ARC	2423	History of Architecture: Renaissance through Nineteenth Century
COM	3553	Intercultural Communication
COM	3563	International Communication
CSH	1203	Introduction to Hispanic Cultures
CSH	1213	Topics in World Cultures
GER	4213	Topics in German Culture and Linguistics
HUM	2093	World Religions
HUM	3623	Topics in National Cultures and Civilizations
IDS	2313	World Literature II: Since the Sixteenth Century
PHI	3073	Asian Philosophy
POL	3743	Film in Politics
SPN	2523	Hispanic Culture and Communication
SPN	3613	Spanish Culture and Civilization
SPN	3623	Latin American Culture and Civilization

4. Social Sciences:

ANT	3363	Indians of Mesoamerica
ANT	4263	Anthropology of Globalization and Development
INS	4953	Topics in International Studies
POL	2603	International Politics
POL	2633	Comparative Politics
POL	3033	International Governance
POL	3043	Human Rights
POL	3063	Comparative Political Participation
POL	3393	Latin American Politics
POL	3403	European Politics
POL	3423	Geopolitics of Russia and Eurasia
POL	3433	Governments and Politics of Southeast Asia
POL	3443	Governments and Politics of East Asia
POL	3453	The Politics of Mexico
POL	3463	Politics of the Third World
POL	3473	Theories and Problems in Latin American Politics
POL	3483	International Political Economy
POL	3493	Politics of the Middle East
POL	3503	American Foreign Policy since World War II
POL	3513	International Organizations
POL	3523	Force in International Politics
POL	3563	Current Issues in World Politics
POL	3743	Film in Politics
POL	3763	Globalization
POL	3783	Comparative Democratization
POL	4003	Comparative Foreign Policy
POL	4103	Latin America and the World
POL	4143	The European Union
PSY	3053	Cross-Cultural Psychology

C. 6 semester credit hours of a single foreign language other than English

Students may substitute the following courses for courses under section B with approval of Department Chair:

INS	4913	Independent Study
INS	4933	Internship in International Studies

To declare a Minor in International Studies, obtain advice, or seek approval of substitutions for course requirements, students should consult the College of Liberal and Fine Arts Advising Center.

Minor in Latin American Studies

The Minor in Latin American Studies provides an interdisciplinary approach to understanding the political, cultural, historical, economical and societal processes and systems of the region.

All students pursuing a Minor in Latin American Studies must complete 18 semester credit hours. No more than four courses from one discipline.

A. 12 semester credit hours selected from the following courses:

ANT	3253	The Archeology of South America
ANT	3363	Indians of Mesoamerica
ECO	4303	Economics of Developing Countries

GRG	3123	Geography of Latin America
HIS	2533	Introduction to Latin American Civilization
HIS	3403	Pre-Hispanic and Colonial Latin America
POL	3393	Latin American Politics
POL	3473	Theories and Problems in Latin American Politics
SPN	3623	Latin American Culture and Civilization

B. 6 semester credit hours from the following courses:

AHC	3423	Arts of Ancient America
ANT	3273	Civilizations of Mexico
BBL	3053	Foundations of Bilingual Studies
GRG	3143	Geography of Mexico
HIS	3063	The Spanish Borderlands, 1521–1821
HIS	3123	Colonial Texas under Spanish and Mexican Rule to 1836
HIS	3293	Imperial Spain
HIS	3303	History of Mexico
HIS	3313	History of U.S. Relations with Latin America
HIS	3353	Latin America since Independence
HIS	3373	Revolution in Latin America
MUS	2693	The Music of Latin America and the Caribbean
POL	3213	Business and Politics in the Third World
POL	3453	The Politics of Mexico
POL	3753	Latino/a Politics
POL	4103	Latin America and the World
SOC	3433	Mexican Immigration and U.S. Society
SPN	3153	Spanish for the Business/Management Fields
SPN	3463	Latin American Literature to Modernism
SPN	3473	Latin American Literature since Modernism

To declare a Minor in Latin American Studies, obtain advice, or seek approval of substitutions for course requirements, students should consult the College of Liberal and Fine Arts Undergraduate Advising Center.

Minor in Legal Studies

All students pursuing a Minor in Legal Studies must complete 21 semester credit hours, at least 12 hours of which must be at the upper-division level.

A. 12 semester credit hours of required courses:

1. LGS 2013 Introduction to Legal Studies
   or
   POL 2623 Law and Society

2. ENG 2413 Technical Writing
   or
   ENG 4953 Special Studies in English: Legal Technical Writing

3. LGS 3013 Legal Research and Writing
   or
   CRJ 3613 Legal Research and Writing

4. LGS 4013 Issues in Law and Society

B. 9 additional semester credit hours (at least 6 of which must be at the upper-division level) from the following list, in at least two disciplines other than the student's major:

ANT	3733	Political and Legal Anthropology
BIO	4073	Law, Ethics, and the Life Sciences
BLW	3013	Business Law
BLW	3023	Business Organizations and Commercial Law
BLW	3523	Real Estate Law
BLW	4153	Tourism Law
BLW	4953	Special Studies in Business Law
COM	3113	Argumentation and Debate
CRJ	3623	Substantive Criminal Law
CRJ	3633	Trial and Evidence
CRJ	4143	Legal Issues in Forensic Science
CRJ	4633	Constitutional Criminal Procedure
CRJ	4853	Sex Crimes and the Law
CRJ	4863	Special Topics in Legal Issues and Adjudication
ES	3203	Environmental Law
HIS	3093	United States Constitutional History
HIS	3183	Law and American Development
LGS	3113	Blacks, Chicanos, and the Law
LGS	3213	Law School Studies
LGS	3313	Science and the Law
LGS	3323	Constitutional Analysis I
LGS	3333	Constitutional Analysis II
LGS	3413	Regulatory Law and Enterprise
LGS	4013	Issues in Law and Society
LGS	4123	Legal and Philosophical Reasoning
LGS	4133	Analytical Reasoning, Logic, Argumentation, and Law School Admission
LGS	4223	Torts
LGS	4233	Federal Courts
LGS	4913	Independent Study
LGS	4933	Internship in Legal Studies
MGT	4643	Human Resources Law
PAD	3023	Introduction to Urban Management and Policy
PAD	3133	Politics and Policies of San Antonio and South Texas
PHI	2043	Introductory Logic
PHI	2063	Philosophy of Law
PHI	4953	Special Studies in Philosophy: Legal and Philosophical Reasoning
POL	2513	Public Administration and Public Policy
POL	3013	The American Legal Process
POL	3023	Civil Liberties in American Law and Practice
POL	3323	Constitutional Law
POL	4123	Legal and Philosophical Reasoning
POL	4153	Seminar in Jurisprudence
POL	4323	Administrative Law

To declare a Minor in Legal Studies or to obtain advice, information, or approvals for course requirement substitutions, students should consult the College of Liberal and Fine Arts Undergraduate Advising Center. Students with questions about the relationship of the Minor in Legal Studies to the UTSA Summer Law School Preparation Academy should contact the Institute for Law and Public Affairs.

Minor in Public Administration

All students pursuing a Minor in Public Administration must complete 18 semester credit hours, 9 hours of which must be at the upper-division level.

A. 3 required semester credit hours:

POL	2513	Public Administration and Public Policy

B. 3 additional semester credit hours of research methods selected from the following:

CRJ	3013	Research Design and Analysis in Criminal Justice
ECO	3123	Introduction to Econometrics and Business Forecasting
GRG	3323	Spatial Analysis
POL	2703	Scope and Methods in Political Science
SOC	3393	Quantitative Research Methods

C. 3 additional semester credit hours selected from the following:

ECO	2003	Economic Principles and Issues (This course may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences: Economics.)
LGS	3013	Legal Research and Writing
POL	2623	Law and Society
POL	3013	The American Legal Process
POL	3023	Civil Liberties in American Law and Practice
POL	3323	Constitutional Law
POL	3633	Political Economy
POL	4323	Administrative Law

D. 9 additional semester credit hours selected from the following:

IS	3003	Principles of Information Systems for Management
MGT	3013	Introduction to Organization Theory, Behavior, and Management
POL	3303	Race, Ethnicity and Public Policy
POL	3413	The Politics of Urban Development
POL	3553	Social Policy in Modern Welfare States
POL	3603	Public Policy Formulation and Implementation
POL	3613	Public Budgeting and Taxation
POL	3623	Public Policy Evaluation
POL	3703	Personnel Administration in the Public Sector

To declare a Minor in Public Administration, obtain advice, or seek approval of substitutions for course requirements, students should consult the College of Liberal and Fine Arts Advising Center.

DEPARTMENT OF PSYCHOLOGY

The Department of Psychology offers a Bachelor of Arts degree in Psychology and a Minor in Psychology. The bachelor's degree emphasizes the empirical study of human behavior and is structured around a comprehensive core curriculum that can lead to additional training in biological psychology, clinical psychology, cognitive psychology, cross-cultural psychology, developmental psychology, health psychology, industrial-organizational psychology, and social psychology.

Department Honors

The Department of Psychology awards Honors in Psychology to certain of its outstanding students and provides the opportunity for advanced study under close faculty supervision.

Selection of students for honors designation is based on a student's academic performance and recommendation by the faculty in the student's major discipline. To be eligible for the program, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.5 in Psychology at UTSA. The minimum grade point averages must be maintained for students to receive the approval of the department faculty. Students applying for Honors in Psychology are expected to enroll in the appropriate honors thesis course during their final two semesters. The completed thesis must be approved by the supervising faculty sponsor and another departmental faculty member.

Students interested in this program should contact their faculty advisors for additional information.

Bachelor of Arts Degree in Psychology

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

The Psychology Department encourages students' participation in the College of Liberal and Fine Arts Signature Experience by offering students a variety of opportunities to apply their ideas and knowledge to real-world settings. All Psychology majors enroll in Experimental Psychology and the accompanying laboratory. Experimental Psychology offers students the opportunity to learn the fundamentals of research design and use these fundamentals to design an original research project which addresses many questions of applied interest. In addition, students can enroll in internships and independent study projects as part of their program of study. Internships are arranged through the Department of Psychology Internship Coordinator and are designed to provide students with experiences at a wide variety of organizations and institutions in the San Antonio area. Independent study projects are arranged through consultation with individual members of the Psychology faculty and are designed to provide students with an opportunity to further develop their research skills. These projects are conducted under the supervision of a faculty member and usually involve work associated with the faculty member's primary line of research.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Psychology must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students will need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1023, MAT 1033, or MAT 1073 is recommended to satisfy the core requirement in Mathematics. PSY 1013 should be used to satisfy the core requirement in Social and Behavioral Science.

Degree Requirements

A. 39 semester credit hours in the major, 24 of which must be at the upper-division level:

1. 15 semester credit hours of lower-division courses:

   a. PSY 1013 Introduction to Psychology

   b. 6 semester credit hours selected from the following:

      PSY 2503 Developmental Psychology
      PSY 2513 Abnormal Psychology
      PSY 2523 Personality
      PSY 2533 Social Psychology

   c. 3 semester credit hours selected from the following:

      PSY 2543 Theories of Learning
      PSY 2573 Psychology of Thought

   d. PSY 2073 Statistics for Psychology or approved substitute (Prerequisites: MAT 1023, MAT 1033, or MAT 1073; and one psychology course.)

      NOTE: PSY 2073 must be completed with a minimum grade of "C–" before enrolling in PSY 3403 and PSY 3413, and should be completed during the freshman or sophomore year.

2. 24 semester credit hours of upper-division courses:

   a. PSY 3403 Experimental Psychology
      PSY 3413 Experimental Psychology Laboratory

   b. 6 semester credit hours selected from the following:

      PSY 3103 Cognition
      PSY 3153 Sensation and Perception
      PSY 4113 Cognitive Development
      PSY 4143 Memory
      PSY 4163 Sensory Processes
      PSY 4213 Social Cognition
      PSY 4293 Visual Information Processing
      PSY 4323 Psychology of Language

   c. 12 semester credit hours of upper-division courses in psychology. No more than 3 hours of Independent Study, Internship in Psychology, or Honors Thesis may be counted toward this requirement.

B. 12 semester credit hours of support work outside of psychology. The courses taken to meet this requirement must have a common focus and must be approved by the student's faculty advisor. A list of the sets of courses that meet this requirement is available from the student's academic advisor. This requirement may be satisfied by completing a minor outside psychology.

C. 27 semester credit hours of electives

Course Sequence Guide for B.A. Degree in Psychology

This course sequence guide is designed to assist students in completing their UTSA undergraduate Psychology degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Psychology – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
HIS 1043, 1053, or 2053 (core)	3
MAT 1023, 1033, or 1073 (core)	3
PSY 1013 (core and major)	3
WRC 1013 (core)	3
Visual & Performing Arts core	3
Total semester hours	*15*
Spring	
HIS 1043, 1053, or 2053 (core)	3
PSY 2073	3
PSY 2503, 2513, 2523, or 2533	3
WRC 1023 (core)	3
Natural Sciences Level I core	3
Total semester hours	*15*
SOPHOMORE YEAR	
Fall	
ECO 2003, 2013, or 2023 (core)	3
POL 1013 (core)	3
PSY 2503, 2513, 2523, or 2533	3
PSY 2543 or 2573	3
Natural Sciences Level II core	3
Total semester hours	*15*

Courses	Credit Hours
Spring	
POL 1133 or 1213 (core)	3
PSY 3403	3
PSY 3413	3
Free elective	3
Literature core	3
Total semester hours	*15*
JUNIOR YEAR	
Fall	
Free elective	3
Free elective	3
PSY Cognitive component	3
Upper-division PSY elective	3
World Society & Issues core	3
Total semester hours	*15*
Spring	
Free elective	3
PSY Cognitive component	3
Upper division free elective	3
Upper-division PSY elective	3
Upper-division support work	3
Total semester hours	*15*
SENIOR YEAR	
Fall	
Free elective	3
Free elective	3
Upper-division PSY elective	3
Upper-division support work	3
Upper-division support work	3
Total semester hours	*15*
Spring	
Free elective	3
Free elective	3
Free elective (to meet 120 hour minimum)	3
Upper-division PSY elective	3
Upper-division support work	3
Total semester hours	*15*

Minor in Psychology

All students pursuing a Minor in Psychology must complete 18 semester credit hours.

A. 6 semester credit hours of required courses:

PSY	1013	Introduction to Psychology (This course may be used to satisfy the Core Curriculum requirement in Social and Behavioral Sciences: Social and Behavioral Science.)
PSY	3403	Experimental Psychology (Concurrent enrollment in PSY 3413 waived; prerequisite of PSY 2073 or equivalent required.)

B. 3 additional semester credit hours selected from the following:

PSY	2503	Developmental Psychology
PSY	2513	Abnormal Psychology
PSY	2523	Personality
PSY	2533	Social Psychology

C. 3 additional semester credit hours selected from the following:

PSY	2543	Theories of Learning
PSY	2573	Psychology of Thought

D. 6 additional upper-division semester credit hours of psychology courses, no more than 3 hours of which may be in Independent Study or Internship

To declare a Minor in Psychology, obtain advice, or seek approval of substitutions for course requirements, students should consult the undergraduate advisor in the College of Liberal and Fine Arts Advising Center.

DEPARTMENT OF SOCIOLOGY

The Department of Sociology offers a Bachelor of Arts degree in Sociology and a Minor in Sociology. At least 36 semester credit hours of sociology coursework are required to fulfill a Sociology major. The 36-hour total is considered a minimum, and students are encouraged to deepen and broaden their grasp of their major through careful allocation of their elective semester credit hours.

The Sociology degree requires students to complete at least 6 semester credit hours of support work. These courses, which require advance approval from advisors, should serve to introduce students to other social sciences in addition to those entailed in the coursework within students' major discipline.

Internship in Sociology

As part of the COLFA Signature Experience, majors in Sociology are required to apply 3 semester credit hours of internship study to their baccalaureate program. Internship entails supervised experience, usually within selected organizations in the San Antonio area. The majors are asked to find their internship placements. The internship coordinator of the Department of Sociology approves placement. Students majoring in nonsocial science disciplines are welcome to participate but should consult with their faculty advisors regarding the role of the internship within their own degree programs. Further information can be obtained from the internship coordinator.

A student may seek a waiver of the internship requirement by submitting a written request to the Chair of the Sociology Department explaining the reasons for waiver. Should a waiver be granted, an Independent Study course must be taken with the approval of the internship coordinator to meet the 36 hour minimum for the major.

Department Honors

The Department of Sociology, through its Department Honors program, provides the opportunity for advanced study under close faculty supervision to those students who have demonstrated outstanding scholarship.

Selection for honors designation is based on academic performance and recommendation by discipline faculty. To be eligible for the program, students must have a minimum grade point average of 3.0 overall at UTSA and a minimum grade point average of 3.5 in Sociology at UTSA. Minimum grade point averages must be maintained for students to receive the approval of the Department Honors Committee and the Sociology faculty. Students applying for Department Honors are expected to enroll in the appropriate honors thesis course during their final two semesters. The supervising faculty sponsor and another department faculty member must approve the completed thesis. Students interested in this program should contact the department's faculty undergraduate advisor for additional information.

Bachelor of Arts Degree in Sociology

The minimum number of semester credit hours required for the Bachelor of Arts degree in Sociology, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Sociology must fulfill University Core Curriculum requirements in the same manner as other students. The course listed below will satisfy both degree requirements and Core Curriculum requirements; however, if this course is taken to satisfy both requirements, then students may need to take an additional course in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

SOC 1013 should be used to satisfy the core requirement in Social and Behavioral Science.

Degree Requirements

A. 36 semester credit hours in the major, 24 hours of which must be at the upper-division level:

   1. 15 semester credit hours of required courses. It is strongly recommended that theory and research methods requirements be completed by the first semester of the junior year.

      6 semester credit hours:

      SOC 1013 Introduction to Sociology
      and
      SOC 3343 Classical Sociological Theory
      or
      SOC 3353 Contemporary Sociological Theory

      6 semester credit hours of methods courses:

      SOC 3323 Introduction to Social Research
      and
      SOC 3373 Qualitative Research Methods
      or
      SOC 3393 Quantitative Research Methods

      3 semester credit hours:

      SOC 4933 Internship in Sociology (This course represents a possible way of fulfilling the COLFA Signature Experience.)

   2. 21 additional semester credit hours of Sociology electives as approved by the student's advisor. Students are encouraged to take a broad variety of courses.

B. 6 semester credit hours of support work in the social sciences outside the major. Social science may include AMS, ANT, BBL, CRJ, GRG, HIS, NPO, POL, PSY, and WS.

C. 6 semester credit hours in a single language other than English

D. 30 semester credit hours of electives. Recommended areas include foreign languages, social sciences, and statistics.

Course Sequence Guide for B.A. Degree in Sociology

This course sequence guide is designed to assist students in completing their UTSA undergraduate Sociology degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Sociology – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
HIS 1043, 1053, or 2053 (core)	3
SOC 1013 (core and major)	3
WRC 1013 (core)	3
Free elective	3
Mathematics core	3
Total semester hours	*15*
Spring	
HIS 1043, 1053, or 2053 (core)	3
WRC 1023 (core)	3
Free elective	3
Free elective	3
Natural Sciences Level I core	3
Total semester hours	*15*
SOPHOMORE YEAR	
Fall	
ECO 2003, 2013, or 2023 (core)	3
SOC 3343 or 3353	3
Free elective	3
Natural Sciences Level II core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Spring	
SOC 3323	3
Free elective	3
Literature core	3
Support work	3
World Society & Issues core	3
Total semester hours	*15*
JUNIOR YEAR	
Fall	
POL 1013 (core)	3
SOC 3373 or 3393	3
Foreign language (semester I)	3 or 4
SOC elective	3
Upper-division free elective	3
Total semester hours	*15 or 16*
Spring	
POL 1133 or 1213 (core)	3
Foreign language (semester II)	3 or 4
Support work	3
Upper-division free elective	3
Upper-division SOC elective	3
Total semester hours	*15 or 16*
SENIOR YEAR	
Fall	
SOC 4933	3
SOC elective	3
Upper-division free elective	3
Upper-division free elective	3
Upper-division SOC elective	3
Total semester hours	*15*
Spring	
Free elective (to meet 120 hour minimum)	1 or 3
SOC elective	3
Upper-division free elective	3
Upper-division SOC elective	3
Upper-division SOC elective	3
Total semester hours	*13 or 15*

Minor in Sociology

All students pursuing a Minor in Sociology must complete 21 semester credit hours, 12 of which must be at the upper-division level.

A. 9 semester credit hours of required courses:

6 semester credit hours:

SOC 1013 Introduction to Sociology
and
SOC 3343 Classical Sociological Theory
or
SOC 3353 Contemporary Sociological Theory

3 semester credit hours of a methods course:

SOC 3323 Introduction to Social Research

B. 12 semester credit hours of Sociology electives

To declare a Minor in Sociology, obtain advice, or seek approval of substitutions for course requirements, students should consult the College of Liberal and Fine Arts Advising Center.

OTHER PROGRAMS IN COLFA

Minor in Film Studies

The Minor in Film Studies provides a broad, interdisciplinary approach to film analysis and criticism, history of cinema, film production, and the uses of film in the fine arts, humanities, and social science disciplines.

All students pursuing a Minor in Film Studies must complete 18 semester credit hours from among the following courses:

ANT	3803	Media, Power, and Public Culture
ANT	4243	Ethnographic Film
CSH	2113	The Foreign Film
HIS	3803	World History in the Cinema
HUM	3103	American Film
HUM	3203	Film Genres
HUM	3303	Major Filmmaker
HUM	3403	Literature into Film
MES	3113	Film Studies
MES	3333	Digital Video Production
MES	4333	Digital Video Practicum
MUS	2743	Music and Film
POL	3743	Film in Politics
SOC	3423	Mass Media in Society

The following topics courses may also be applied toward the 18-hour requirement when they examine film or cinema:

AHC	4333	Topics in Art History and Criticism
AMS	3343	Studies in Race and Ethnicity
AMS	4823	Topics in American Culture
ART	4033	Studio Art Problems
ENG	4613	Topics in Mexican American Literature
ENG	4953	Special Studies in English
ENG	4973	Seminar for English Majors
FRN	4213	Topics in French Culture and Linguistics
GER	4213	Topics in German Culture and Linguistics
HUM	3703	Topics in Popular Culture
HUM	4953	Special Studies in Humanities
HUM	4973	Seminar for Humanities Majors
RUS	3633	Topics in Russian Culture
SPN	4303	Topics in Hispanic Cultures

Other courses that include a focus on film or cinema may be proposed as substitutions in satisfying requirements for the Minor.

To declare a Minor in Film Studies, obtain advice, or seek approval of substitutions for course requirements, students should consult the College of Liberal and Fine Arts Undergraduate Advising Center.

College of Public Policy

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8. College of Public Policy

DEPARTMENT OF CRIMINAL JUSTICE

The Department of Criminal Justice offers a Bachelor of Arts degree in Criminal Justice, which provides the opportunity for comprehensive study of criminal justice, and a Minor in Criminal Justice. Students completing the Bachelor of Arts degree may pursue professional careers in government or the private sector as well as apply for admission to law or graduate schools.

Bachelor of Arts Degree in Criminal Justice

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level. Criminal Justice majors, through consultation with faculty advisors, should choose elective courses from Core Curriculum requirements that will enhance their awareness of the complex social and cultural issues confronting contemporary American society.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Criminal Justice must fulfill University Core Curriculum requirements. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

CRJ 1113 or CRJ 2813 may be used to satisfy the core requirement in Social and Behavioral Science as well as a major requirement.

Degree Requirements

A. 15 semester credit hours of core criminal justice coursework:

CRJ	1113	The American Criminal Justice System
CRJ	2153	Nature of Crime and Justice
CRJ	3013	Research Design and Analysis in Criminal Justice
CRJ	3213	Managing Criminal Justice Organizations
CRJ	3623	Substantive Criminal Law

B. 18 semester credit hours of justice studies, at least 15 of which must be upper division, chosen from the following courses:

CRJ	2213	Introduction to Policing
CRJ	2513	Introduction to Corrections
CRJ	2813	Introduction to Courts and the Legal System
CRJ	3233	Introduction to Forensic Science
CRJ	3533	Probation, Parole and Intermediate Sanctions
CRJ	3563	Juvenile Justice
CRJ	3573	Restorative Justice
CRJ	3613	Legal Research and Writing
CRJ	3633	Trial and Evidence
CRJ	3713	Ethics in Criminal Justice Practice
CRJ	4113	Intimate and Family Violence
CRJ	4123	Investigations
CRJ	4143	Legal Issues in Forensic Science
CRJ	4303	Victimology
CRJ	4403	Race, Ethnicity, and Criminal Justice
CRJ	4413	Contemporary Police Practices
CRJ	4443	Special Topics in Policing and Crime Prevention
CRJ	4453	Drugs and Crime
CRJ	4463	Gender and Crime
CRJ	4523	Special Topics in Forensic Science
CRJ	4563	Special Topics in Juvenile Justice
CRJ	4613	Supervising the Correctional Client
CRJ	4633	Constitutional Criminal Procedure
CRJ	4653	White Collar Crime
CRJ	4663	Special Topics in Corrections
CRJ	4833	Violent Crime
CRJ	4843	Study Abroad: International Criminal Justice
CRJ	4853	Sex Crimes and the Law
CRJ	4863	Special Topics in Legal Issues and Adjudication
CRJ	4913	Independent Study
CRJ	4953	Special Studies in Criminal Justice
CRJ	4993	Honors Thesis

C. 3 semester credit hours of CRJ 4933 Internship in Criminal Justice taken in consultation with the Department's internship coordinator. 3 semester credit hours of appropriate upper-division coursework may be taken in lieu of the internship if a student has relevant and documented full-time employment of at least one year in duration in a justice-related agency. May be repeated for an additional 3 credit hours with a different internship work site in a subsequent semester.

D. 15 semester credit hours of upper-division support work, chosen in consultation with an academic advisor

E. 27 semester credit hours of electives

Course Sequence Guide for Bachelor of Arts Degree in Criminal Justice

This course sequence guide is designed to assist students in completing their UTSA undergraduate Criminal Justice degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the Downtown Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Bachelor of Arts in Criminal Justice – Recommended Four-Year Academic Plan

Courses	Credit Hours
FIRST YEAR	
Fall	
CRJ 1113 (major and core)	3
HIS 1043 or 1053 or 2053 (core)	3
WRC 1013 (core)	3
Elective	3
World Society & Issues core	3
Total semester hours	*15*
Spring	
CRJ 2153	3
HIS 1043 or 1053 or 2053 (core)	3
WRC 1023 (core)	3
Elective	3
Mathematics core	3
Total semester hours	*15*
SECOND YEAR	
Fall	
CRJ 3213	3
POL 1013 (core)	3
Elective	3
Literature core	3
Natural Sciences Level I core	3
Total semester hours	*15*
Spring	
CRJ 3623	3
POL 1133 or 1213 (core)	3
Elective	3
Natural Sciences Level II core	3
Visual & Performing Arts core	3
Total semester hours	*15*
THIRD YEAR	
Fall	
ECO 2003 or 2013 or 2023 (core)	3
Elective	3
Justice Studies course	3
Justice Studies course	3
Upper-division support work	3
Total semester hours	*15*
THIRD YEAR	
Spring	
CRJ 3013	3
CRJ 4933	3
Elective	3
Elective	3
Upper-division support work	3
Total semester hours	*15*

Courses	Credit Hours
FOURTH YEAR	
Fall	
Elective	3
Elective	3
Justice Studies course	3
Upper-division support work	3
Upper-division support work	3
Total semester hours	*15*
Spring	
Elective	3
Justice Studies course	3
Justice Studies course	3
Justice Studies course	3
Upper-division support work	3
Total semester hours	*15*

Minor in Criminal Justice

All students pursuing a Minor in Criminal Justice must complete 21 semester credit hours.

A. 9 semester credit hours of required courses:

CRJ	1113	The American Criminal Justice System
CRJ	2153	Nature of Crime and Justice
CRJ	3623	Substantive Criminal Law

B. 12 semester credit hours of electives, 9 hours of which must be upper-division (3000- and 4000-level) Criminal Justice (CRJ) electives. These electives will be selected by the student to reflect his or her specific interests.

To declare a Minor in Criminal Justice, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult the College of Public Policy Advising Center (located on the Downtown Campus).

DEPARTMENT OF DEMOGRAPHY

Currently programs are in effect at the graduate level only.

DEPARTMENT OF PUBLIC ADMINISTRATION

The mission of the Department of Public Administration is to prepare students for careers and leadership roles in public and nonprofit organizations and to nurture their commitment to ethical public service in a diverse society.

Bachelor of Public Administration Degree

A Bachelor of Public Administration degree is designed to prepare students for employment in the public and nonprofit sector by giving them a broad background in the basics of administration, combined with a contemporary focus on urban management, the nonprofit sector, tools of analysis, and the role of ethics.

The minimum number of semester credit hours required for the degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Public Administration must fulfill University Core Curriculum requirements. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

Degree Requirements

A. 18 semester credit hours of core Public Administration coursework:

PAD	1113	Public Administration in American Society
PAD	2153	Methodological Tools in Public Administration
PAD	3013	Introduction to Public Policy
PAD	3023	Introduction to Urban Management and Policy
PAD	3033	Introduction to Nonprofit Agencies
PAD	4853	Contemporary Issues in Public Administration (Senior Seminar)

B. 21 semester credit hours of prescribed courses, at least 9 of which must be Public Administration (Section I) coursework:

Section I:

NPO	3003	Fundraising in Nonprofit Agencies
NPO	4933	Internship in Nonprofit Management (prior approval required)
PAD	3043	Public and Nonprofit Financial Management
PAD	3053	Urban Economic Development
PAD	3113	Managing Public and Nonprofit Organizations
PAD	3123	Strategic Planning in the Public and Nonprofit Sectors
PAD	3133	Politics and Policies of San Antonio and South Texas
PAD	3143	Urban and Regional Planning
PAD	4911,3	Independent Study
PAD	4933	Internship in Public Administration (prior approval required)
PAD	4953	Special Topics in Nonprofit Organizations
PAD	4963	Special Topics in Urban Management and Policy
PAD	4993	Honors Thesis

Section II:

COM	3893	Organizational Communication
CRJ	1113	The American Criminal Justice System
CRJ	3213	Managing Criminal Justice Organizations
CRJ	3623	Substantive Criminal Law
ECO	2003	Economic Principles and Issues
ECO	3273	Introduction to Public Sector Economics
FIN	3003	Survey of Finance
GRG	3314	Introduction to Geographic Information Systems
HIS	3153	Development of American Urban Society
IS	3003	Principles of Information Systems for Management
MS	4333	Project Management

In addition to the above list, Section II also includes any course listed in the UTSA Minor in Business Administration, or the Minor in Political Science.

C. 15 semester hours of upper-division support work, chosen in consultation with an academic advisor

D. 24 semester hours of free electives (some may need to be upper division in order to meet the 39 hour University requirement)

Course Sequence Guide for Bachelor of Public Administration Degree

This course sequence guide is designed to assist students in completing their UTSA undergraduate Public Administration degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the Downtown Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

Bachelor of Public Administration – Recommended Four-Year Academic Plan

Courses	Credit Hours
FIRST YEAR	
Fall	
HIS 1043 or 1053 or 2053 (core)	3
PAD 1113	3
POL 1013 (core)	3
WRC 1013 (core)	3
Social & Behavioral Science core	3
Total semester hours	*15*

Courses	Credit Hours
Spring	
HIS 1043 or 1053 or 2053 (core)	3
WRC 1023 (core)	3
Mathematics core	3
Visual & Performing Arts core	3
World Society & Issues core	3
Total semester hours	*15*

SECOND YEAR

Fall	
PAD 2153	3
Elective	3
Elective	3
Literature core	3
Natural Sciences Level I core	3
Total semester hours	*15*
Spring	
ECO 2003 or 2013 or 2023 (core)	3
PAD 3013	3
POL 1133 or 1213 (core)	3
Natural Sciences Level II core	3
Prescribed course (see degree requirement B)	3
Total semester hours	*15*

THIRD YEAR

Fall	
PAD 3023	3
Prescribed course (see degree requirement B)	3
Prescribed course (see degree requirement B)	3
Prescribed course (see degree requirement B)	3
Upper-division support work	3
Total semester hours	*15*
Spring	
PAD 3033	3
Elective	3
Elective	3
Prescribed course (see degree requirement B)	3
Upper-division support work	3
Total semester hours	*15*

FOURTH YEAR

Fall	
Elective	3
Elective	3
Prescribed course (see degree requirement B)	3
Upper-division support work	3
Upper-division support work	3
Total semester hours	*15*

Courses	Credit Hours
Spring	
PAD 4853	3
Elective	3
Elective	3
Prescribed course (see degree requirement B)	3
Upper-division support work	3
Total semester hours	*15*

Minor in Nonprofit Management

The Minor in Nonprofit Management is open to students in any discipline. The Minor in Nonprofit Management provides the opportunity for students to learn the characteristics of the nonprofit sector, the purpose of the nonprofit sector in American society, and basic management and fundraising techniques. Students will be provided the opportunity to prepare themselves for leadership positions in social service, youth, environmental, health, arts, senior and other nonprofit organizations.

All students seeking the Minor in Nonprofit Management must complete the following 12 semester credit hours:

NPO	3003	Fundraising in Nonprofit Agencies
NPO	3013	Introduction to Nonprofit Agencies
NPO	4933	Internship in Nonprofit Management
PAD	3043	Public and Nonprofit Financial Management

Student must also take 6 semester credit hours or any two courses from the following list:

COM	3893	Organizational Communication
PAD	3113	Managing Public and Nonprofit Organizations
PAD	3123	Strategic Planning in the Public and Nonprofit Sectors
PAD	4953	Special Topics in Nonprofit Organizations

Students should not take NPO 4933 until they have completed 9 hours in the minor. To declare a Minor in Nonprofit Management, obtain advice, obtain lists of relevant courses, or seek approval of substitutions for course requirements, students should consult the College of Public Policy Advising Center (located on the Downtown Campus).

DEPARTMENT OF SOCIAL WORK

Currently programs are in effect at the graduate level only.

College of Sciences

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9. College of Sciences

Mission Statement

The College of Sciences aims to:

- Advance scientific literacy through excellence in education and community outreach.
- Conduct cutting-edge research to expand the frontiers of science and mathematics.
- Establish broad partnerships to enhance scientific competence at all levels.
- Provide leadership in the education of under-represented and disadvantaged groups.

College Honors

The College of Sciences provides an opportunity for a select group of outstanding students to do advanced study under close faculty supervision. Students who successfully complete the program, graduate with College Honors.

Selection for honors designation is based on the student's academic performance and recommendation by the faculty of the student's major discipline in the College of Sciences. To be eligible for the program, students must have a minimum overall grade point average of 3.0 at UTSA and a minimum grade point average of 3.0 in their major in the College of Sciences at UTSA. These minimum averages must be maintained for students to receive the approval of the Dean of the College of Sciences and the discipline faculty. Students applying for College Honors are expected to enroll in the appropriate honors research course during their final two semesters. The completed research paper must be approved by the supervising faculty sponsor and another college faculty member. Students interested in this program should contact their faculty advisors for additional information.

DEPARTMENT OF BIOLOGY

The Department of Biology offers a Bachelor of Science degree in Biology, a Minor in Biology, and a Bachelor of Science degree in Environmental Science.

Bachelor of Science Degree in Biology

The Bachelor of Science degree in Biology is designed to prepare students for professional careers in the biological sciences, medical and health service fields, research, industry, and education. The program of study is structured around a comprehensive core curriculum that includes genetics, physiology, cell biology, chemistry, physics, computer science, and mathematics. At the upper-division level, students wanting to specialize can choose one of five area concentrations: Cell and Molecular Biology, Integrative Biology, Microbiology/Immunology, Neurobiology, or Plant Biology.

Admission Policy

The goal of the Department of Biology is to provide undergraduate students a program of study with the highest possible standards. To achieve this goal, the admission policy of the Department of Biology is designed to identify those students most likely to succeed in their undergraduate biology education. All applicants for admission to the Department of Biology will be admitted to the Department as prebiology (PBI) students. In order to declare Biology as a major, a student's academic performance will be evaluated after the five courses listed below have been completed. To declare a Biology major, a PBI student must have:

- a grade point average of at least 2.0 for all UTSA coursework
- a grade point average of at least 2.25 for all UTSA Department of Biology coursework
- successfully satisfied all three sections (mathematics, reading, and writing) of the Texas Success Initiative (TSI)
- successfully completed the following or equivalent courses with a grade of "C–" or better:

BIO	1404	Biosciences I
BIO	1413	Biosciences II
CHE	1103	General Chemistry I
MAT	1193	Calculus for the Biosciences
PHY	1943	Physics for Scientists I or PHY 1603 Algebra-based Physics I

Applicants who have completed all the above courses as equivalent transferable college credit with a grade of "C–" or better and have no UTSA coursework can declare a Biology major if they:

- meet all UTSA undergraduate admission requirements
- have a cumulative grade point average of 2.25 or better for all college-level courses completed
- have successfully satisfied all three sections (mathematics, reading, and writing) of the Texas Success Initiative (TSI)

PBI students are restricted from registering for upper-division (3000- and 4000-level) Biology courses without the consent of an undergraduate advisor in the College of Sciences Undergraduate Advising Center. A student who does not meet all the above requirements after completing 15 hours of UTSA Biology credit will no longer be considered a PBI student and their major will be changed from PBI to undeclared (UND) in the University student record system. The student must choose a major other than biology. A biology minor is, however, available to all UTSA students who seek to complement a different academic major with a strong foundation in biology. Students can be reinstated as a Biology major, but only after successfully completing all the PBI requirements, and upon approval of the Biology Department.

Academic Standing of Biology Majors

All B.S. Majors in Biology must maintain:

- a minimum overall UTSA grade point average of 2.0.
- a minimum overall grade point average of 2.25 in all Department of Biology courses.

Students who do not meet these requirements are placed on Department of Biology academic probation. Students on Department of Biology academic probation must achieve the minimum required grade point averages by the end of the next enrolled long semester at UTSA (Fall or Spring) that follows the semester in which the student falls below the required grade point averages. Students who do not meet the minimum requirements by the end of the next subsequent-enrolled long semester will be dismissed from the B.S. degree in Biology and classified as undeclared (UND) in the University student record system. The student must choose a major other than biology. A biology minor is, however, available to all UTSA students who seek to complement a different academic major with a strong foundation in biology. Dismissed students may appeal one time for reinstatement to the B.S. in Biology degree program: such appeals will be granted only under extraordinary circumstances. The deadline for appeal is no later than four weeks into the semester immediately following dismissal. See the College of Sciences Undergraduate Advising Center for required forms. All Biology majors must have the required minimum grade point averages in order to receive the Bachelor of Science degree.

Program of Study for the Bachelor of Science Degree in Biology

The minimum number of semester credit hours required for the Bachelor of Science degree in Biology, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level. All major and support work courses and the required prerequisites must be completed with a grade of "C–" or better. Students seeking teacher certification should contact the Teacher Advising and Certification Center in the College of Education and Human Development for information. Undergraduates seeking elementary teacher certification must complete the Interdisciplinary Studies degree.

For students wishing to add focus and expertise to their degree, the Department of Biology also offers the Bachelor of Science degree with a concentration in one of five areas: Cell and Molecular Biology, Integrative Biology, Microbiology/Immunology, Neurobiology, and Plant Biology. Adding an area of concentration does not require additional coursework beyond the normal Bachelor of Science degree program. Students do, however, have to restrict their selection of biology electives to a predefined list of complementary courses and complete the coursework within the concentration with a minimum cumulative grade point average of 3.0 or better. Students are also encouraged to enroll in Laboratory Research: Biology Concentrations (BIO 4923) as part of their program of study. Specific courses required for each concentration are listed following the general degree requirements.

All candidates for this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed on the following pages.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Biology must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1193 or STA 1403 may be used to satisfy the core requirement in Mathematics as well as a major requirement. Two of the following courses may be used to satisfy the core requirement in Natural Sciences, as well as major requirements: BIO 1404, BIO 1413, CHE 1103, CHE 1113, and PHY 1603/1623 or PHY 1943/1963.

Degree Requirements

A. 46 semester credit hours in the major, 32 of which must be at the upper-division level:

1. 29 semester credit hours in biology are required:

BIO	1122	Laboratory Investigations in Biology
BIO	1404	Biosciences I
BIO	1413	Biosciences II
BIO	2313, 2322	Genetics and Laboratory
BIO	3413, 3422	Advanced Physiology and Laboratory
BIO	3513, 3522	Biochemistry and Laboratory
BIO	3813, 3822	Cell Biology and Laboratory

2. 5 semester credit hours of a lecture and accompanying laboratory course are required from the following:

BIO	3283, 3292	Principles of Ecology and Laboratory
BIO	3433, 3442	Neurobiology and Laboratory
BIO	3713, 3722	Microbiology and Laboratory
BIO	4143, 4152	Developmental Biology and Laboratory

(Note: A laboratory section adds a valuable dimension to the understanding of the material presented in a lecture. In general, students are encouraged to add the appropriate laboratory section to any lecture beyond the minimum 5-semester-credit-hour requirement.)

3. 12 additional semester credit hours of biology electives at the upper-division level

B. 33 semester credit hours of support work:

The support courses listed below are mandatory prerequisites for various biology courses starting in a student's sophomore year. Students need to complete their support work as soon as possible, in their freshman and sophomore years, to be eligible to register for upper-division biology core courses and electives. Failure to complete the support courses listed below in a timely fashion will significantly delay a student's progress toward graduation.

1. 16 semester credit hours of required chemistry courses:

CHE	1103, 1121	General Chemistry I and Laboratory
CHE	1113, 1131	General Chemistry II and Laboratory
CHE	2603, 2612	Organic Chemistry I and Laboratory
CHE	3673	Organic Chemistry II with Biological Applications

2. 6 semester credit hours of required mathematics and statistics courses:

MAT	1193	Calculus for the Biosciences
STA	1403	Probability and Statistics for the Biosciences

3. 8 semester credit hours of required physics courses:

PHY	1603, 1611	Algebra-based Physics I and Laboratory
PHY	1623, 1631	Algebra-based Physics II and Laboratory

or

PHY	1943, 1951	Physics for Scientists I and Laboratory
PHY	1963, 1971	Physics for Scientists II and Laboratory

4. 3 semester credit hours of computer-based data visualization and analysis:

CS	1173	Data Analysis and Visualization using MATLAB

C. 8 semester credit hours of free electives, at least 4 hours of which must be at the upper-division level to reach the minimum requirement of 39 upper-division semester credit hours

Concentrations

For students interested in research or graduate programs, the Department of Biology offers five areas of concentration. To declare a concentration or obtain advice, students should consult an undergraduate advisor in the College of Sciences Undergraduate Advising Center. It is highly recommended that the student complete a research project related to the specific concentration by taking BIO 4923 Laboratory Research: Biology Concentrations. If a student takes any of the courses listed below that satisfy both the Biology degree and concentration requirements, then the student may need to take additional upper-division Biology courses in order to meet the minimum number of semester credit hours required for the Biology degree. The coursework within the concentration must be completed with a minimum cumulative grade point average of 3.0 or better.

Concentration in Cell and Molecular Biology

All candidates for the Concentration in Cell and Molecular Biology must complete the following:

BIO	3913	Molecular Biology

and three of the following upper-division elective courses:

BIO	3163	Histology and Cytology
BIO	3933	Principles of Cancer Biology
BIO	4143	Developmental Biology
BIO	4453	Endocrinology
BIO	4923	Laboratory Research: Biology Concentrations (Research must be in a laboratory engaged in molecular biology research.)

Concentration in Integrative Biology

All candidates for the Concentration in Integrative Biology must complete the following:

BIO	3283, 3292	Principles of Ecology and Laboratory

and two of the following upper-division elective courses:

BIO	3003	Introduction to Marine Ecology
BIO	3063	Invertebrate Biology
BIO	3213	Animal Behavior
BIO	3323	Evolution
BIO	4033	Conservation Biology
BIO	4043	Desert Biology
BIO	4053	Wildlife Biology
BIO	4063	Ornithology
BIO	4233	Field Biology
BIO	4923	Laboratory Research: Biology Concentrations (Research must be in a laboratory engaged in integrative biology research.)

Concentration in Microbiology/Immunology

All candidates for the Concentration in Microbiology/Immunology must complete the following:

BIO	3713, 3722	Microbiology and Laboratory
BIO	4743	Immunology

and two of the following upper-division elective courses:

BIO	3013	Introduction to Clinical Medicine and Pathology
BIO	3743	Bacteriology
BIO	4473	Advanced Clinical Medicine and Pathology
BIO	4483	Medical Mycology
BIO	4493	Molecular Mycology
BIO	4723	Virology
BIO	4763	Parasitology
BIO	4923	Laboratory Research: Biology Concentrations (Research must be in a laboratory engaged in microbiology or immunology research.)

Concentration in Neurobiology

All candidates for the Concentration in Neurobiology must complete the following:

BIO 3433, 3442 Neurobiology and Laboratory

and two of the following upper-division elective courses:

BIO 3213 Animal Behavior
BIO 3623 Neuropsychopharmacology
BIO 4583 The Computational Brain
BIO 4813 Brain and Behavior
BIO 4823 Cognitive Neuroscience
BIO 4923 Laboratory Research: Biology Concentrations (Research must be in a laboratory engaged in neurobiology research.)

Concentration in Plant Biology

All candidates for the Concentration in Plant Biology must complete the following:

BIO 3343 Plant Cell Biology

and three of the following upper-division elective courses:

BIO 3263 The Woody Plants
BIO 3273 Biology of Flowering Plants
BIO 3333 Plants and Society
BIO 4643 Medicinal Plants
BIO 4923 Laboratory Research: Biology Concentrations (Research must be in a laboratory engaged in plant-based research.)

Course Sequence Guide for B.S. Degree in Biology

This course sequence guide is designed to assist students in completing their UTSA undergraduate Biology degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Sciences Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Biology – Recommended Four-Year Academic Plan

Courses	Credit Hours
FIRST YEAR	
Fall	
BIO 1404* (core and major)	4
CHE 1103*	3
CHE 1121**	1
MAT 1193*	3
WRC 1013 (core)	3
Total semester hours	*14*
Spring	
BIO 1122	2
BIO 1413* (core and major)	3
CHE 1113	3
CHE 1131**	1
CS 1173	3
WRC 1023 (core)	3
Total semester hours	*15*
SECOND YEAR	
Fall	
CHE 2603	3
CHE 2612**	2
PHY 1603*/1611 or PHY 1943*/1951	3/1
Free elective	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
BIO 2313	3
BIO 2322**	2
CHE 3673	3
PHY 1623/1631 or PHY 1963/1971	3/1
STA 1403	3
Total semester hours	*15*
THIRD YEAR	
Fall	
BIO 3413	3
BIO 3422	2
BIO 3513	3
BIO 3522**	2
Literature core	3
Social & Behavioral Science core	3
Total semester hours	*16*
Spring	
BIO 3813	3
BIO 3822**	2
Economics core	3
Upper-division BIO lab (BIO 3XX2)	2
Upper-division BIO lecture (BIO 3XX3)	3
Visual & Performing Arts core	3
Total semester hours	*16*
FOURTH YEAR	
Fall	
POL 1013 (core)	3
Upper-division BIO elective	3
Upper-division BIO elective	3
Upper-division BIO elective	3
U.S. History & Diversity core	3
Total semester hours	*15*

Courses	Credit Hours
Spring	
POL 1133 or 1213 (core)	3
Upper-division BIO elective	3
Upper-division free elective	3
Upper-division free elective	2
World Society & Issues core	3
Total semester hours	*14*

* In order to declare Biology as a major, a student's academic performance will be evaluated after these five courses have been completed. Students must see an advisor in the College of Sciences Undergraduate Advising Center to declare a Biology major.

** These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Biology for scheduling of courses.

Minor in Biology

The Minor in Biology is open to all majors in the University. To declare a Minor in Biology or obtain advice, students should consult an undergraduate advisor in the College of Sciences Undergraduate Advising Center. All students pursuing the minor must complete a minimum of 19 semester credit hours of Biology courses. It should be noted that students seeking a minor must also complete applicable support coursework in chemistry, computer science, physics, mathematics and statistics as needed to fulfill the normal prerequisites for any course listed below. All Biology courses and their prerequisites must be completed with a grade of "C–" or better, and students must achieve a grade point average of at least 2.0 on all work used to satisfy the requirements of the minor.

A. 10 semester credit hours of required courses:

BIO	1404	Biosciences I
BIO	1413	Biosciences II
BIO	2313	Genetics

B. 9 semester credit hours of 3000- or 4000-level organized biology courses. (Excludes independent study, research and seminar courses. Substitutions are not allowed without approval of the Biology department.)

Bachelor of Science Degree in Environmental Science

The Bachelor of Science (B.S.) degree in Environmental Science aims to provide students in the program with both basic and advanced training in the field of Environmental Science. Students will develop skills in how to monitor environmental conditions as well as analyze environmental problems. The main areas of study will include biological, geological, and chemical characteristics of environmental processes and natural resources. Today's environmental problems call for scientists who are educated in more than one discipline, highly trained in technical skills, and aware of the political and social dimensions of environmental problems and how to make decisions with regard to these situations. The B.S. program covers the areas of biology, chemistry, and geology in relation to the discipline. Coursework includes a variety of interdisciplinary topics ranging from fundamentals of Geographic Information Systems, environmental systems, environmental chemistry, environmental microbiology, environmental remediation, global change and environmental law. Students will gain hands-on experience with many of the instrumental techniques used in environmental analysis and have the opportunity to engage in teamwork for field studies, excursions and laboratory studies. Problem solving through individual exploration as well as a member of a team is emphasized, due to the nature of environmental science being a multidisciplinary field. This will require students to use many of the chemical, geological and biological analytical techniques in assessing and solving problems. There is a strong emphasis on producing graduates with well-developed oral and written communication skills who are capable of complex problem solving.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Environmental Science must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

The core requirements in Mathematics and Natural Sciences are automatically fulfilled in obtaining a B.S. degree in Environmental Science.

Degree Requirements

A. 32 semester credit hours of required environmental science courses completed with a grade of "C–" or better:

ES	2013, 2021	Introduction to Environmental Systems I and Laboratory
ES	2023, 2031	Introduction to Environmental Systems II and Laboratory
ES	3033, 3042	Environmental Ecology and Laboratory

ES	3053, 3061	Environmental Remediation and Laboratory
ES	3103, 3112	Environmental Microbiology and Laboratory
ES	3203	Environmental Law
ES	4003, 4011	Environmental Chemistry and Toxicology and Laboratory
ES	4103	Global Change

B. 38 semester credit hours of required science courses completed with a grade of "C–" or better:

BIO	1122	Laboratory Investigations in Biology
BIO	1404	Biosciences I
CHE	1103	General Chemistry I
CHE	1113, 1131	General Chemistry II and Laboratory
CHE	2603, 2612	Organic Chemistry I and Laboratory
CS	1073	Introductory Computer Programming for Scientific Applications
		or
CS	1173	Data Analysis and Visualization using MATLAB
GEO	2113	Fundamentals of Geographic Information Systems (GIS)
GEO	4023	Engineering Geology
MAT	1214	Calculus I
PHY	1603, 1611	Algebra-based Physics I and Laboratory
STA	1993	Biostatistics

C. 17 semester credit hours of required elective courses:

Seventeen semester hours of electives, at least 12 hours of which must be at the upper-division level to meet the UTSA minimum of 39 upper-division hours. While the degree is a general degree in environmental science, three areas of study have been identified within the B.S. degree program for students interested in either the biological, geological, or chemical aspects of Environmental Science (Biosphere, Geosphere, or Chemosphere). Depending on their area of interest, students must select electives from the list below. Students must take at least 9 semester credit hours from one of the groups below (A, B, or C), with the remaining hours coming from any of the groups. Students may need to take prerequisite coursework for some of the courses listed below.

Group A Electives

BIO	2313	Genetics
BIO	2322	Genetics Laboratory
BIO	3003	Introduction to Marine Ecology
BIO	3063	Invertebrate Biology
BIO	3213	Animal Behavior
BIO	3263	The Woody Plants
BIO	3273	Biology of Flowering Plants
BIO	3323	Evolution
BIO	3343	Plant Cell Biology
BIO	3413	Advanced Physiology
BIO	3513	Biochemistry
BIO	3522	Biochemistry Laboratory
BIO	4033	Conservation Biology
BIO	4053	Wildlife Biology
BIO	4063	Ornithology
BIO	4083	Entomology
BIO	4233	Field Biology
BIO	4241	Field Biology Laboratory
BIO	4643	Medicinal Plants
ES	4911-3	Independent Study
ES	4951-3	Special Studies in Environmental Science
MAT	1224	Calculus II

Group B Electives

ES	4193	Field-Based Inquiry
ES	4203	Environmental Assessment
ES	4911-3	Independent Study
ES	4951-3	Special Studies in Environmental Science
GEO	1123	Earth History
GEO	1131	Earth History Laboratory
GEO	2123	Advanced Geographic Information Systems (GIS)
GEO	3013	Global Positioning System (GPS) Mapping for GIS
GEO	3112	Geologic Field Investigations
GEO	3163	Oceanography
GEO	3374	Geochemistry
GEO	3383	General Geophysics
GEO	4063	Environmental Geology
GEO	4093	Principles of Remote Sensing
GEO	4113	Geomorphology
GEO	4121	Geomorphology Laboratory
GEO	4623	Ground-Water Hydrology
GEO	4911-3	Independent Study
GEO	4933	Field Geology Part I
GEO	4943	Field Geology Part II
GEO	4951-3	Special Studies in Geology
MAT	1224	Calculus II

Group C Electives

CHE	3214	Analytical Chemistry
CHE	3464	Descriptive Inorganic Chemistry
CHE	3643	Organic Chemistry II
CHE	3652	Organic Chemistry II Laboratory
CHE	3804	Physical Chemistry I and Laboratory
CHE	3824	Physical Chemistry II and Laboratory
CHE	4213	Instrumental Analysis
CHE	4463	Inorganic Chemistry
CHE	4653	Synthesis and Biosynthesis of Natural Products
CHE	4883	Introduction to Mass Spectrometry
CHE	4911-3	Independent Study
CHE	4953	Special Studies in Chemistry
MAT	1224	Calculus II

Course Sequence Guide for B.S. Degree in Environmental Science

This course sequence guide is designed to assist students in completing their UTSA undergraduate Environmental Science degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Sciences Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Environmental Science – Recommended Four-Year Academic Plan

Courses	Credit Hours
FIRST YEAR	
Fall	
BIO 1404 (core and major)	4
BIO 1122	2
ES 2013/2021	3/1
MAT 1214 (core and major)	4
Total semester hours	*14*
Spring	
CHE 1103 (core and major)	3
CS 1073 or CS 1173	3
ES 2023/2031	3/1
Social & Behavioral Science core	3
Total semester hours	*13*
SECOND YEAR	
Fall	
CHE 1113/1131*	3/1
STA 1993**	3
U.S. History & Diversity core	3
U.S. History & Diversity core	3
WRC 1013 (core)	3
Total semester hours	*16*
Spring	
CHE 2603/2612*	3/2
GEO 2113	3
PHY 1603/1611	3/1
WRC 1023 (core)	3
Total semester hours	*15*
THIRD YEAR	
Fall	
ES 3033/3042	3/2
ES 4003/4011	3/1
Literature core	3
Upper-division elective from Group A, B, or C	3
Total semester hours	*15*
Spring	
ES 3053/3061	3/1
ES 3203	3
GEO 4023	3
POL 1133 or 1213 (core)	3
Upper-division elective from Group A, B, or C	3
Total semester hours	*16*

Courses	Credit Hours
FOURTH YEAR	
Fall	
ES 3103/3112	3/2
POL 1013 (core)	3
Economics core	3
Upper-division elective from Group A, B, or C	3
Upper-division elective from Group A, B, or C	2
Total semester hours	*16*
Spring	
ES 4103	3
Elective from Group A, B, or C	3
Upper-division elective from Group A, B, or C	3
Visual & Performing Arts core	3
World Society & Issues core	3
Total semester hours	*15*

* These laboratory courses include a lecture component as indicated on the University Schedule of Classes. (Note: The prerequisite for CHE 1131 is CHE 1121.)

** The prerequisite for this course is STA 1053.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Biology for scheduling of courses.

DEPARTMENT OF CHEMISTRY

Bachelor of Science Degree in Chemistry

The Bachelor of Science degree in Chemistry provides opportunities for preparation for careers in industry, governmental agencies, environmental studies, preprofessional programs, and medical technology, and for graduate study in chemistry or other related fields. The degree plan, as described below for the Bachelor of Science degree in Chemistry, meets the minimum requirements for professional chemists as defined by the American Chemical Society, and recipients receive a certificate from the American Chemical Society.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120, at least 39 of which must be at the upper-division level. All major and support work courses must be completed with a grade of "C–" or better.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Chemistry must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement. Two of the following courses may be used to satisfy the core requirement in Natural Sciences as well as major requirements: CHE 1103, CHE 1113, PHY 1943, or PHY 1963.

Degree Requirements

A. 50 semester credit hours of required courses in chemistry:

CHE	1103	General Chemistry I (or CHE 1143 Principles of Chemistry I)
CHE	1113	General Chemistry II (or CHE 1153 Principles of Chemistry II)
CHE	1121	General Chemistry I Laboratory
CHE	1131	General Chemistry II Laboratory
CHE	2603	Organic Chemistry I
CHE	2612	Organic Chemistry I Laboratory
CHE	2803	Quantitative Topics for Chemists
CHE	3214	Analytical Chemistry
CHE	3464	Descriptive Inorganic Chemistry
CHE	3643	Organic Chemistry II
CHE	3652	Organic Chemistry II Laboratory
CHE	3804	Physical Chemistry I and Laboratory
CHE	3824	Physical Chemistry II and Laboratory
CHE	4213	Instrumental Analysis
CHE	4303	Biochemistry
CHE	4463	Inorganic Chemistry
CHE	4913	Independent Study
		or
CHE	4923	Special Project in Chemistry
CHE	4971	Proseminar

B. 9 additional semester credit hours of approved upper-division chemistry electives, 6 hours of which must be organized courses in chemistry, at the 4000 level or above; no more than 3 semester credit hours may be from CHE 4913 Independent Study, CHE 4923 Special Project in Chemistry or CHE 4993 Honors Research.

C. 22 semester credit hours of support work in science, mathematics, and statistics:

1. 19 semester credit hours of required courses:

MAT	1214	Calculus I
MAT	1224	Calculus II
PHY	1943, 1951	Physics for Scientists I and Laboratory
PHY	1963, 1971	Physics for Scientists II and Laboratory
STA	1053	Basic Statistics

2. 3 additional semester credit hours of elective work from the College of Sciences, as approved by the advisor

D. 6 semester credit hours of electives

Course Sequence Guide for B.S. Degree in Chemistry

This course sequence guide is designed to assist students in completing their UTSA undergraduate Chemistry degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Sciences Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Chemistry – Recommended Four-Year Academic Plan

Courses	Credit Hours
FIRST YEAR	
Fall	
CHE 1103 or CHE 1143 (core and major)	3
CHE 1121*	1
MAT 1214 (core and major)	4
STA 1053	3
WRC 1013 (core)	3
Total semester hours	*14*

Courses	Credit Hours
Spring	
CHE 1113 or CHE 1153 (core and major)	3
CHE 1131*	1
MAT 1224	4
WRC 1023 (core)	3
U.S. History & Diversity core	3
Total semester hours	*14*

SECOND YEAR

Fall	
CHE 2603	3
CHE 2612*	2
CHE 3214	4
PHY 1943/1951	3/1
Total semester hours	*13*
Spring	
CHE 2803	3
CHE 3643	3
CHE 3652*	2
PHY 1963/1971	3/1
U.S. History & Diversity core	3
Total semester hours	*15*
Summer	
POL 1013 (core)	3
College of Sciences elective	3
Total semester hours	*6*

THIRD YEAR

Fall	
CHE 3804	4
CHE 4303	3
POL 1133 or 1213 (core)	3
Free elective	3
World Society & Issues core	3
Total semester hours	*16*
Spring	
CHE 3464	4
CHE 3824	4
Economics core	3
Literature core	3
Total semester hours	*14*

FOURTH YEAR

Fall	
CHE 4463	3
CHE 4913 or CHE 4923	3
Upper-division CHE elective	3
Upper-division CHE elective	3
Social & Behavioral Science core	3
Total semester hours	*15*
Spring	
CHE 4213	3
CHE 4971	1
Free elective	3
Upper-division CHE elective	3
Visual & Performing Arts core	3
Total semester hours	*13*

* These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Chemistry for scheduling of courses.

Bachelor of Arts Degree in Chemistry

The Bachelor of Arts degree in Chemistry is a less comprehensive degree than the Bachelor of Science degree in Chemistry. It provides opportunities for preparation for careers in industry, governmental agencies, environmental studies, and preprofessional programs. It is not recommended for students planning to pursue graduate studies in chemistry or related fields. It does not meet the criteria for an American Chemical Society approved degree in chemistry.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120, at least 39 of which must be at the upper-division level. All major and support work courses must be completed with a grade of "C–" or better.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Chemistry must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement. Two of the following courses may be used to satisfy the core requirement in Natural Sciences as well as major requirements: CHE 1103, CHE 1113, and PHY 1603/1623 or PHY 1943/1963.

Degree Requirements

A. 34 semester credit hours of required courses in chemistry:

CHE	1103	General Chemistry I (or CHE 1143 Principles of Chemistry I)
CHE	1113	General Chemistry II (or CHE 1153 Principles of Chemistry II)
CHE	1121	General Chemistry I Laboratory
CHE	1131	General Chemistry II Laboratory

CHE 2603 Organic Chemistry I
CHE 2612 Organic Chemistry I Laboratory
CHE 3214 Analytical Chemistry
CHE 3464 Descriptive Inorganic Chemistry
CHE 3643 Organic Chemistry II (or CHE 3673 Organic Chemistry II with Biological Applications)
CHE 3652 Organic Chemistry II Laboratory
CHE 3854 Basic Biophysical Chemistry
CHE 4213 Instrumental Analysis
CHE 4971 Proseminar

B. 12 additional semester credit hours of approved upper-division chemistry electives; no more than 6 semester credit hours may be from CHE 4913 Independent Study, CHE 4923 Special Project in Chemistry or CHE 4993 Honors Research.

C. 34 semester credit hours of support work in science and mathematics:

1. 16 semester credit hours of required courses:

MAT 1214 Calculus I
MAT 1224 Calculus II

PHY 1603, 1611 Algebra-based Physics I and Laboratory
PHY 1623, 1631 Algebra-based Physics II and Laboratory

or

PHY 1943, 1951 Physics for Scientists I and Laboratory
PHY 1963, 1971 Physics for Scientists II and Laboratory

2. 18 additional semester credit hours of approved upper-division electives from the College of Sciences; up to 6 semester credit hours may be from the College of Engineering (9 semester credit hours from the College of Education and Human Development for students seeking teacher certification) with approval of the advisor of the degree-granting program.

D. 7 semester credit hours of electives

Course Sequence Guide for B.A. Degree in Chemistry

This course sequence guide is designed to assist students in completing their UTSA undergraduate Chemistry degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Sciences Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Chemistry – Recommended Four-Year Academic Plan

Courses	Credit Hours
FIRST YEAR	
Fall	
CHE 1103 or CHE 1143 (core and major)	3
CHE 1121*	1
MAT 1214 (core and major)	4
WRC 1013 (core)	3
U.S. History & Diversity core	3
Total semester hours	*14*
Spring	
CHE 1113 or CHE 1153 (core and major)	3
CHE 1131*	1
MAT 1224	4
WRC 1023 (core)	3
Social & Behavioral Science core	3
Total semester hours	*14*
SECOND YEAR	
Fall	
CHE 2603	3
CHE 2612*	2
CHE 3214	4
Free elective	3
Literature core	3
Total semester hours	*15*
Spring	
CHE 3643	3
CHE 3652*	2
PHY 1603/1611 or PHY 1943/1951	3/1
POL 1013 (core)	3
World Society & Issues core	3
Total semester hours	*15*
Summer	
PHY 1623/1631 or PHY 1963/1971	3/1
Total semester hours	*4*
THIRD YEAR	
Fall	
POL 1133 or 1213 (core)	3
Upper-division CHE elective	3
Upper-division COS elective	3
Upper-division COS elective	3
Upper-division COS elective	3
Total semester hours	*15*
Spring	
CHE 3464	4
CHE 3854	4
Economics core	3
Free elective	4
Total semester hours	*15*
FOURTH YEAR	
Fall	
Upper-division CHE elective	3
Upper-division CHE elective	3
Upper-division COS elective	3

Courses	Credit Hours
Upper-division COS elective	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
CHE 4213	3
CHE 4971	1
Upper-division CHE elective	3
Upper-division COS elective	3
Visual & Performing Arts core	3
Total semester hours	*13*

* These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Chemistry for scheduling of courses.

Minor in Chemistry

The purpose of this program is to permit students majoring in other areas to obtain a solid, broad-based knowledge of chemistry. The program is applicable to those students in other areas of science and in preprofessional programs. All coursework for the Minor in Chemistry must be completed with a grade of "C–" or better.

23 semester credit hours are required for this minor:

CHE	1103	General Chemistry I (or CHE 1143 Principles of Chemistry I)
CHE	1113	General Chemistry II (or CHE 1153 Principles of Chemistry II)
CHE	1121	General Chemistry I Laboratory
CHE	1131	General Chemistry II Laboratory
CHE	2603	Organic Chemistry I
CHE	2612	Organic Chemistry I Laboratory
CHE	3643	Organic Chemistry II (or CHE 3673 Organic Chemistry II with Biological Applications)

7 additional credit hours of 2000-, 3000- or 4000-level chemistry courses including at least one of the following laboratory-based courses:

CHE	3214	Analytical Chemistry
CHE	3464	Descriptive Inorganic Chemistry
CHE	3854	Basic Biophysical Chemistry

To declare a Minor in Chemistry, obtain advice, or seek approval of substitutions for course requirements, students should consult the undergraduate advisor in the College of Sciences Undergraduate Advising Center.

DEPARTMENT OF COMPUTER SCIENCE

The Department of Computer Science offers a Bachelor of Science degree in Computer Science with a strong technical emphasis on modern computing and systems. The degree program offers students the opportunity to prepare for advanced graduate study and for careers in high-technology companies, business, government, and teaching. The department offers concentrations in Computer and Information Security and Software Engineering as well as a Minor in Computer Science.

Bachelor of Science Degree in Computer Science

The Bachelor of Science degree in Computer Science requires a minimum of 120 semester credit hours, including the Core Curriculum requirements. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All majors in computer science are required to complete all required and elective computer science courses with a grade of "C–" or better.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Computer Science must fulfill University Core Curriculum requirements in the same manner as other students. The course listed below will satisfy both degree requirements and Core Curriculum requirements; however, if this course is taken to satisfy both requirements, then students may need to take an additional course in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement.

Degree Requirements

A. 54 semester credit hours of required courses (this also satisfies the 3 hours of Core Curriculum requirements for Mathematics):

CS	1063	Introduction to Computer Programming I
CS	1713, 1711	Introduction to Computer Programming II and Recitation
CS	2123, 2121	Data Structures and Recitation
CS	2233, 2231	Discrete Mathematical Structures and Recitation
CS	3333, 3331	Mathematical Foundations of Computer Science and Recitation
CS	3343, 3341	Analysis of Algorithms and Recitation
CS	3423, 3421	Systems Programming and Recitation
CS	3443	Application Programming
CS	3723, 3721	Programming Languages and Recitation
CS	3733, 3731	Operating Systems and Recitation
CS	3843, 3841	Computer Organization and Recitation
CS	3853, 3851	Computer Architecture and Recitation
MAT	1214	Calculus I (The student who is not prepared for MAT 1214 must take MAT 1093 Precalculus.)
MAT	1224	Calculus II

B. 24 additional semester credit hours of upper-division computer science courses (not including CS 4213). With prior written approval of the Undergraduate Advisor of Record, students may take upper-division MAT or STA courses to satisfy up to 6 hours of this requirement. A student with a cumulative grade point average of 3.0 or better may enroll in graduate courses and apply the credits earned toward satisfying this requirement. Enrollment in graduate courses requires prior written approvals as described in chapter 1 (Bachelor's Degree Regulations) of this catalog.

C. 3 semester credit hours of free electives

Concentration in Computer and Information Security

All candidates for the Concentration in Computer and Information Security must fulfill the Core Curriculum requirements and the Computer Science degree requirements including, as part of the upper-division computer science electives in item B in the degree requirements, the following three courses:

CS 3433 Principles of Computer and Information Security
CS 4353 Unix and Network Security
CS 4363 Cryptography

Concentration in Software Engineering

All candidates for the Concentration in Software Engineering must fulfill the Core Curriculum requirements and the Computer Science degree requirements including, as part of the upper-division computer science electives in item B in the degree requirements, the following course:

CS 3773 Software Engineering

plus two additional courses selected from the following:

CS 4393 User Interfaces
CS 4723 Software Validation and Quality Assurance
CS 4733 Project Management
CS 4773 Object-Oriented Systems

Course Sequence Guide for B.S. Degree in Computer Science

This course sequence guide is designed to assist students in completing their UTSA undergraduate Computer Science degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Sciences Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Computer Science – Recommended Four-Year Academic Plan

Courses	Credit Hours
FIRST YEAR	
Fall	
CS 1063	3
MAT 1214 (core and major)	4
WRC 1013 (core)	3
Visual & Performing Arts core	3
World Society & Issues core	3
Total semester hours	*16*
Spring	
CS 1713/1711	3/1
MAT 1224	4
POL 1133 or 1213 (core)	3
WRC 1023 (core)	3
Total semester hours	*14*
SECOND YEAR	
Fall	
CS 2123/2121	3/1
POL 1013 (core)	3
Free elective	3
Natural Sciences Level I core	3
Social & Behavioral Science core	3
Total semester hours	*16*
Spring	
CS 2233/2231	3/1
CS 3333/3331	3/1
CS 3443	3
Natural Sciences Level II core	3
Total semester hours	*14*
THIRD YEAR	
Fall	
CS 3423/3421	3/1
CS 3723/3721	3/1
CS 3843/3841	3/1
Upper-division CS elective*	3
Total semester hours	*15*
Spring	
CS 3343/3341	3/1
CS 3733/3731	3/1
CS 3853/3851	3/1
Upper-division CS elective	3
Total semester hours	*15*

Courses	Credit Hours
FOURTH YEAR	
Fall	
Economics core	3
Upper-division CS elective	3
Upper-division CS elective	3
Upper-division CS elective	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
Literature core	3
Upper-division CS elective	3
Upper-division CS elective	3
Upper-division CS elective	3
U.S. History & Diversity core	3
Total semester hours	*15*

* CS 3773 must be taken for Software Engineering concentration.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Computer Science for scheduling of courses.

Minor in Computer Science

All students pursuing the Minor in Computer Science must complete 20 semester credit hours.

A. 11 semester credit hours of required courses:

CS	1063	Introduction to Computer Programming I
CS	1713, 1711	Introduction to Computer Programming II and Recitation
CS	2123, 2121	Data Structures and Recitation

B. 9 hours of additional CS core courses or approved CS electives, at least 6 hours of which must be at the upper-division level

To declare a Minor in Computer Science, obtain advice, or seek approval of substitutions for course requirements, students should consult the College of Sciences Undergraduate Advising Center.

DEPARTMENT OF GEOLOGICAL SCIENCES

The degree programs offered by the Department of Geological Sciences—a Bachelor of Science degree in Multidisciplinary Science, or Geology, a Bachelor of Arts degree in Geology, and a Minor in Geology—reflect the Department's policy of offering the opportunity for a comprehensive education of the highest quality, individualized to the needs and interests of the student. Completion of a basic science curriculum allows students to apply for entry into one of several highly specialized areas in geology. Students who have majored in one of these degree programs are eligible to apply for positions in education, industry, or government as well as for entry into professional or graduate schools.

Bachelor of Science Degree in Multidisciplinary Science

The Bachelor of Science degree in Multidisciplinary Science (MDS) is designed for future scientists or future secondary science teachers, and gives students broad training across the sciences. The MDS degree, coupled with a concentration at the upper-division level in a single science field (major requirements A and B(2), below), is ideal for future scientists interested in an interdisciplinary approach in science. The MDS degree also offers a composite science certification track through the College of Education and Human Development (COEHD), which is designed to prepare students for a career in teaching secondary school science (major requirements A and B(1), below). Students seeking teacher certification should contact the COEHD Advising and Certification Center as early in their educational program as possible, but no later than their fourth semester of study, for information about certificate requirements and admission procedures. Undergraduates seeking elementary teacher certification must complete the Interdisciplinary Studies degree.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120 hours, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Multidisciplinary Science must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

The core requirements in Mathematics and Natural Sciences are automatically fulfilled in obtaining a B.S. degree in Multidisciplinary Science.

Degree Requirements

NOTE: All coursework must be completed with a grade of "C–" or better.

A. 66 semester credit hours of required science courses:

AST	1013	Introduction to Astronomy
BIO	1122	Laboratory Investigations in Biology
BIO	1404	Biosciences I
BIO	1413	Biosciences II
BIO	2313	Genetics
BIO	3153	Physiology of Human Systems
BIO	3283, 3292	Principles of Ecology and Laboratory
BIO	3323	Evolution
CHE	1103, 1121	General Chemistry I and Laboratory
CHE	1113, 1131	General Chemistry II and Laboratory
CHE	3214	Analytical Chemistry
GEO	1103, 1111	Introduction to Earth Systems and Laboratory
GEO	3004	Rocks, Fossils, and Global Tectonics
GEO	3163	Oceanography
MAT	1093	Precalculus
PHY	3003	Current Research Topics in Physics
STA	1053	Basic Statistics

Either

PHY	1603, 1611	Algebra-based Physics I and Laboratory
PHY	1623, 1631	Algebra-based Physics II and Laboratory

or

*PHY	1943, 1951	Physics for Scientists I and Laboratory
*PHY	1963, 1971	Physics for Scientists II and Laboratory

* Note that the prerequisites for Physics for Scientists are Calculus I and II (MAT 1214 and MAT 1224). These can be included among the elective courses in sciences and mathematics.

MDS Degree with Certification (composite science emphasis):

B(1). 21 semester credit hours of electives to satisfy certification requirements:

C&I	4203	Models of Teaching in the Content Areas of the Secondary School
C&I	4646	Student Teaching: Grades 8–12
EDP	3203	Learning and Development in the Secondary School Adolescent
EDP	4203	Assessment and Evaluation
GEM	1011	GEEMS Mathematics/Science I
GEM	1021	GEEMS Mathematics/Science II
GEM	1031	GEEMS Mathematics/Science III
RDG	3773	Reading and Writing Across the Disciplines–Secondary

MDS Degree without Certification:

B(2). 21 semester credit hours of approved electives in geology, biology, chemistry, physics, environmental science, and/or mathematics, including a sufficient number of upper-division hours to meet the UTSA minimum of 39 upper-division hours.

Students seeking an MDS degree as preparation for a graduate degree in science should follow as closely as possible the degree requirements of their chosen science as those courses are most likely to be required by graduate schools in that field. Non-certification-seeking students should, at a minimum, pursue a minor in any one or more science. It is possible through careful planning to achieve a double major in MDS and another science. All MDS students should create a four-year plan through the College of Sciences Undergraduate Advising Center as early as possible in their course of study, and continue to check in on a course-by-course basis should those plans change.

Course Sequence Guide for B.S. Degree in Multidisciplinary Science (without teacher certification)

This course sequence guide is designed to assist students in completing their UTSA undergraduate Multidisciplinary Science degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Sciences Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Multidisciplinary Science – Recommended Four-Year Academic Plan

Courses	Credit Hours
FIRST YEAR	
Fall	
GEO 1103/1111 (core and major)	3/1
MAT 1093 (core and major)	3
STA 1053	3
WRC 1013 (core)	3
U.S. History & Diversity core	3
Total semester hours	*16*
Spring	
BIO 1122	2
BIO 1404 (core and major)	4
CHE 1103/1121*	3/1
WRC 1023 (core)	3
Visual & Performing Arts core	3
Total semester hours	*16*
SECOND YEAR	
Fall	
BIO 1413	3
CHE 1113/1131*	3/1
POL 1013 (core)	3
Literature core	3
Social & Behavioral Science core	3
Total semester hours	*16*

Courses	Credit Hours
Spring	
BIO 2313	3
BIO 3283/3292	3/2
GEO 3163	3
Economics core	3
Total semester hours	*14*
THIRD YEAR	
Fall	
AST 1013	3
BIO 3323	3
CHE 3214	4
PHY 1603/1611 or PHY 1943/1951	3/1
Total semester hours	*14*
Spring	
GEO 3004	4
PHY 1623/1631 or PHY 1963/1971	3/1
Approved elective**	3
Approved elective**	3
Total semester hours	*14*
FOURTH YEAR	
Fall	
PHY 3003	3
POL 1133 or 1213 (core)	3
Approved elective**	3
Approved elective**	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
BIO 3153	3
Approved elective**	3
Approved elective**	3
Approved elective**	3
World Society & Issues core	3
Total semester hours	*15*

* These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

** Approved Electives in BIO, CHE, GEO, PHY, ES, and/or MAT.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Geological Sciences for scheduling of courses.

Bachelor of Science Degree in Geology

The Bachelor of Science degree in Geology provides opportunities to prepare for careers in the geosciences (for example, earth resources exploration and development, water resources, environmental assessment and remediation, engineering geology, geochemistry, and geophysics) and for successful studies in graduate school. The program of study focuses on fundamentals and learning skills used by geologists in their professional careers.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Geology must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

The core requirements in Mathematics and Natural Sciences are automatically fulfilled in obtaining a B.S. degree in Geology.

Degree Requirements

A. 60 semester credit hours in geology completed with a grade of "C–" or better:

1. 39 semester credit hours of required courses:

GEO	1103, 1111	Introduction to Earth Systems and Laboratory
GEO	1123, 1131	Earth History and Laboratory
GEO	2003, 2011	Mineralogy and Laboratory
GEO	2113	Fundamentals of Geographic Information Systems (GIS)
GEO	3043, 3051	Petrology and Laboratory
GEO	3063, 3071	Paleontology and Laboratory
GEO	3103, 3111	Structural Geology and Laboratory
GEO	3112	Geologic Field Investigations
GEO	3123, 3131	Sedimentation and Stratigraphy and Laboratory
GEO	4933	Field Geology Part I
GEO	4943	Field Geology Part II

2. 21 additional semester credit hours selected from the following courses. Students should meet with the College of Sciences Advising Center and/or a member of the Department of Geological Sciences to verify that they have taken the necessary prerequisites.

GEO	2123	Advanced Geographic Information Systems (GIS)
GEO	3013	Global Positioning System (GPS) Mapping for GIS

GEO	3143, 3151	Economic Geology and Laboratory
GEO	3163	Oceanography
GEO	3374	Geochemistry
GEO	3383	General Geophysics
GEO	3393	Introduction to Isotope Geochemistry
GEO	4013	Volcanology
GEO	4023	Engineering Geology
GEO	4063	Environmental Geology
GEO	4093	Principles of Remote Sensing
GEO	4113, 4121	Geomorphology and Laboratory
GEO	4623	Ground-Water Hydrology
GEO	4803	Analytical Methods in Geology
GEO	4911-3	Independent Study
GEO	4951-3	Special Studies in Geology
GEO	4993	Honors Research

B. 27 required semester credit hours in the College of Sciences:

CHE	1103, 1121	General Chemistry I and Laboratory
CHE	1113, 1131	General Chemistry II and Laboratory
CS	1073	Introductory Computer Programming for Scientific Applications
		or
CS	1173	Data Analysis and Visualization using MATLAB
		or
CS	2073	Computer Programming with Engineering Applications
MAT	1214	Calculus I
MAT	1224	Calculus II
Either		
PHY	1603, 1611	Algebra-based Physics I and Laboratory
PHY	1623, 1631	Algebra-based Physics II and Laboratory
or		
PHY	1943, 1951	Physics for Scientists I and Laboratory
PHY	1963, 1971	Physics for Scientists II and Laboratory

Course Sequence Guide for B.S. Degree in Geology

This course sequence guide is designed to assist students in completing their UTSA undergraduate Geology degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Sciences Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Geology – Recommended Four-Year Academic Plan

Courses	Credit Hours
FIRST YEAR	
Fall	
CHE 1103/1121* (core and major)	3/1
GEO 1103/1111 (core and major)	3/1
MAT 1214 (core and major)	4
WRC 1013 (core)	3
Total semester hours	*15*
Spring	
CHE 1113/1131*	3/1
CS 1073 or CS 1173 or CS 2073	3
GEO 1123/1131	3/1
MAT 1224	4
Total semester hours	*15*
SECOND YEAR	
Fall	
GEO 2003/2011	3/1
GEO 3112	2
PHY 1943/1951 or PHY 1603/1611	3/1
WRC 1023 (core)	3
Visual & Performing Arts core	3
Total semester hours	*16*
Spring	
GEO 2113	3
GEO 3043/3051	3/1
PHY 1963/1971 or PHY 1623/1631	3/1
World Society & Issues core	3
Total semester hours	*14*
THIRD YEAR	
Fall	
GEO 3123/3131	3/1
POL 1013 (core)	3
Upper-division GEO elective	3
Upper-division GEO elective	3
Total semester hours	*13*
Spring	
GEO 3063/3071	3/1
GEO 3103/3111	3/1
POL 1133 or 1213 (core)	3
Upper-division GEO elective	3
Total semester hours	*14*
Summer	
GEO 4933	3
GEO 4943	3
Total semester hours	*6*
FOURTH YEAR	
Fall	
Literature core	3
Upper-division GEO elective	3
Upper-division GEO elective	3
U.S. History & Diversity core	3
Total semester hours	*12*

Courses	Credit Hours
Spring	
Economics core	3
Social & Behavioral Science core	3
Upper-division GEO elective	3
Upper-division GEO elective	3
U.S. History & Diversity core	3
Total semester hours	*15*

* These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Geological Sciences for scheduling of courses.

Bachelor of Arts Degree in Geology

The Bachelor of Arts degree in Geology provides opportunities to prepare for careers in fields such as earth science education, law, insurance, financial services, energy business, and environmental management. It is not recommended for students planning to pursue careers as professional geologists or graduate studies in geology or related fields.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120, at least 39 of which must be at the upper-division level.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Geology must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

The core requirements in Mathematics and Natural Sciences are automatically fulfilled in obtaining a B.A. degree in Geology.

Degree Requirements

A. 43 semester credit hours of geology courses completed with a grade of "C–" or better:

1. 27 semester credit hours of required courses:

GEO	1103, 1111	Introduction to Earth Systems and Laboratory
GEO	1123, 1131	Earth History and Laboratory
GEO	2003, 2011	Mineralogy and Laboratory
GEO	2113	Fundamentals of Geographic Information Systems (GIS)
GEO	3043, 3051	Petrology and Laboratory
GEO	3063, 3071	Paleontology and Laboratory
GEO	3123, 3131	Sedimentation and Stratigraphy and Laboratory

2. 16 semester credit hours at the upper-division level selected from among the remaining GEO course offerings. Students should meet with the College of Sciences Advising Center and/or a member of the Department of Geological Sciences to verify that they have taken the necessary prerequisites.

B. 20 semester credit hours in the College of Sciences:

CHE	1103, 1121	General Chemistry I and Laboratory
CHE	1113, 1131	General Chemistry II and Laboratory
		or
GEO	3374	Geochemistry
MAT	1214	Calculus I
PHY	1603, 1611	Algebra-based Physics I and Laboratory
PHY	1623, 1631	Algebra-based Physics II and Laboratory

C. 24 semester credit hours of electives to meet the 120 semester credit hour degree minimum, of which a minimum of 7 to 11 must be at the upper-division level to meet the UTSA minimum of 39 upper-division hours.

Course Sequence Guide for B.A. Degree in Geology

This course sequence guide is designed to assist students in completing their UTSA undergraduate Geology degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Sciences Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Geology – Recommended Four-Year Academic Plan

Courses	Credit Hours
FIRST YEAR	
Fall	
CHE 1103/1121* (core and major)	3/1
GEO 1103/1111 (core and major)	3/1
MAT 1214 (core and major)	4
WRC 1013 (core)	3
Total semester hours	*15*
Spring	
GEO 1123/1131	3/1
WRC 1023 (core)	3
Free elective	3
Social & Behavioral Science core	3
Visual & Performing Arts core	3
Total semester hours	*16*

Courses	Credit Hours
SECOND YEAR	
Fall	
CHE 1113/1131* or GEO 3374**	3/1
CS 1073† or Free elective	3
GEO 2003/2011	3/1
Free elective	3
Total semester hours	*14*
Spring	
GEO 2113	3
GEO 3043/3051	3/1
PHY 1603/1611	3/1
Free elective	3
Total semester hours	*14*
THIRD YEAR	
Fall	
GEO 3123/3131	3/1
PHY 1623/1631	3/1
Literature core	3
Upper-division GEO elective	3
Total semester hours	*14*
Spring	
GEO 3063/3071	3/1
POL 1013 (core)	3
Upper-division GEO elective	3
Upper-division GEO elective	3
World Society & Issues core	3
Total semester hours	*16*
FOURTH YEAR	
Fall	
Free elective	3
Free elective	3
Upper-division Free elective	3
Upper-division GEO elective	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
POL 1133 or 1213 (core)	3
Economics core	3
Upper-division Free elective	3
Upper-division GEO elective	3
Upper-division GEO elective (3XX1)	1
U.S. History & Diversity core	3
Total semester hours	*16*

* These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

** Offered Fall semesters only.

† CS 1073 is a prerequisite for GEO 2113 and can be used as a free elective.

Note: Some courses are only offered once a year; fall or spring. Check with the Department of Geological Sciences for scheduling of courses.

Minor in Geology

All students pursuing the Minor in Geology must complete 21 semester credit hours. All coursework must be completed with a grade of "C–" or better.

A. 12 semester credit hours of required courses:

GEO	1103, 1111	Introduction to Earth Systems and Laboratory
GEO	1123, 1131	Earth History and Laboratory
GEO	2003, 2011	Mineralogy and Laboratory
		or
GEO	3004	Rocks, Fossils, and Global Tectonics

B. A minimum of 9 semester credit hours of approved upper-division geology electives.

To declare a Minor in Geology, obtain advice about prerequisites about approved upper-division geology electives, or seek approval of substitutions for course requirements, students should consult the College of Sciences Undergraduate Advising Center.

DEPARTMENT OF MATHEMATICS

The Department of Mathematics offers a Bachelor of Science degree in Mathematics. The degree is offered in two concentrations: Mathematics and General Mathematical Studies. The Mathematics Concentration offers students the opportunity to prepare to provide technical support and conduct research for high-technology industries, government, and private companies. Both concentrations prepare students to pursue advanced graduate study. The General Mathematical Studies Concentration includes a component for those students wishing to obtain state certification to teach mathematics at the secondary level. The department also offers a Minor in Mathematics. Students interested in electives in Statistics, a Minor in Applied Statistics, or a Bachelor of Science degree in Statistics, should refer to the Department of Management Science and Statistics in the College of Business section of this catalog.

Bachelor of Science Degree in Mathematics

The Bachelor of Science degree in Mathematics is offered with two concentrations: Mathematics and General Mathematical Studies.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

Students choosing the General Mathematical Studies Concentration who wish to pursue teacher certification should satisfy the Core Curriculum requirements consistent with the State Board for Educator Certification.

All required and elective mathematics, computer science, and statistics courses must be completed with a grade of "C–" or better.

All candidates for this degree must fulfill the Core Curriculum requirements and the mathematics requirements, which are listed in the following pages. In addition, a candidate for the Bachelor of Science degree in Mathematics must complete the course requirements for the concentration declared by the candidate.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Mathematics must fulfill University Core Curriculum requirements. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement.

Mathematics Degree Requirements

All candidates for the Bachelor of Science degree in Mathematics, regardless of concentration, must complete the following 24 semester credit hours of required courses (this includes the 3 semester credit hours of the Core Curriculum requirement in mathematics):

MAT	1214	Calculus I (The student who is not prepared to begin MAT 1214 must take MAT 1093 Precalculus.)
MAT	1224	Calculus II
MAT	2214	Calculus III
MAT	2233	Linear Algebra
MAT	3013	Foundations of Mathematics
MAT	3213	Foundations of Analysis
MAT	4213	Real Analysis I

In addition, a candidate for the Bachelor of Science degree in Mathematics must complete the course requirements for the concentration declared by the candidate.

Mathematics Concentration

All candidates for this concentration must fulfill the Core Curriculum requirements, the mathematics degree requirements, as well as the course requirements necessary for this concentration.

A. 3 or 4 semester credit hours of computer science:

CS	1063	Introduction to Computer Programming I
		or
CS	1713, 1711	Introduction to Computer Programming II and Recitation
		or
CS	2073	Computer Programming with Engineering Applications

B. 18 semester credit hours of required courses:

MAT	3613	Differential Equations I
MAT	3633	Numerical Analysis
MAT	4223	Real Analysis II
MAT	4233	Modern Abstract Algebra
STA	3003	Applied Statistics
STA	3513	Probability and Statistics

C. 9 additional semester credit hours of upper-division courses in mathematics or statistics approved by the student's advisor

D. 26 or 27 semester credit hours of electives

General Mathematical Studies Concentration

All candidates for this concentration must fulfill the Core Curriculum requirements, the mathematics degree requirements, as well as the course requirements necessary for this concentration.

A. 3 semester credit hours of computer science:

CS	1063	Introduction to Computer Programming I
		or
CS	2073	Computer Programming with Engineering Applications

B. 21 semester credit hours of mathematics and/or statistics:

1. 18 semester credit hours of mathematics:

MAT	3103	Data Analysis and Interpretation
MAT	3123	Fundamentals of Geometry
		or
MAT	4263	Geometry

MAT 3233 Modern Algebra
or
MAT 4233 Modern Abstract Algebra

MAT 4013 Graphing Calculator Topics
MAT 4113 Computer Mathematical Topics
MAT 4303 Capstone Course for Mathematics

2. 3 approved upper-division semester credit hours in mathematics

C. 3 semester credit hours of required academic foundations:

COM 1043 Introduction to Communication

D. 30 semester credit hours of electives:

Students seeking teacher certification should use these hours for the required certification courses. Other students should include among these an additional 6 semester credit hours of upper-division mathematics or statistics courses approved by an undergraduate advisor for the Department of Mathematics.

Certification requirements for students pursuing the General Mathematical Studies Concentration are different from degree requirements. In addition to specific course requirements, teacher certification in Texas also requires passing scores on a Texas Success Initiative approved assessment instrument test and acceptable scores on the state-mandated exit competency test. Complete information may be obtained in the College of Education and Human Development Advising and Certification Center at UTSA.

Course Sequence Guide for B.S. Degree in Mathematics with a Mathematics Concentration

This course sequence guide is designed to assist students in completing their UTSA undergraduate Mathematics degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Sciences Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Mathematics, Mathematics Concentration – Recommended Four-Year Academic Plan

Courses	Credit Hours
FIRST YEAR	
Fall	
MAT 1214 (core and major)	4
WRC 1013 (core)	3
Free Elective	3
Natural Sciences Level I core	3
U.S. History & Diversity core	3
Total semester hours	*16*
Spring	
CS 1063 or CS 1713/1711 or CS 2073	3 or 4
MAT 1224	4
WRC 1023 (core)	3
Natural Sciences Level II core	3
Total semester hours	*13 or 14*
SECOND YEAR	
Fall	
MAT 2214	4
MAT 2233	3
POL 1013 (core)	3
Free elective	3
Literature core	3
Total semester hours	*16*
Spring	
MAT 3013	3
POL 1133 or 1213 (core)	3
STA 3003	3
Free elective	3
Visual & Performing Arts core	3
Total semester hours	*15*
THIRD YEAR	
Fall	
MAT 3613	3
STA 3513	3
Free elective	3
Social & Behavioral Science core	3
Upper-division MAT or STA elective	3
Total semester hours	*15*
Spring	
MAT 3213	3
MAT 4233	3
Economics core	3
Free elective	3
Upper-division MAT or STA elective	3
Total semester hours	*15*
FOURTH YEAR	
Fall	
MAT 3633	3
MAT 4213	3
Free elective	3
Free elective	3
Upper-division Free elective	3
Total semester hours	*15*
Spring	
MAT 4223	3
Free elective*	2 or 3
Upper-division MAT or STA elective	3

Courses	Credit Hours
U.S. History & Diversity core	3
World Society & Issues core	3
Total semester hours	*14 or 15*

* Only 2 semester credit hours are needed if CS 1713 and CS 1711 are taken.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Mathematics for scheduling of courses.

Course Sequence Guide for B.S. Degree in Mathematics with a General Mathematical Studies Concentration

This course sequence guide is designed to assist students in completing their UTSA undergraduate Mathematics degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Sciences Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Mathematics, General Mathematical Studies Concentration – Recommended Four-Year Academic Plan

Courses	Credit Hours
FIRST YEAR	
Fall	
COM 1043	3
MAT 1214 (core and major)	4
WRC 1013 (core)	3
Free elective	3
Natural Sciences Level I core	3
Total semester hours	*16*
Spring	
CS 1063 or CS 2073	3
MAT 1224	4
WRC 1023 (core)	3
Free elective	3
Natural Sciences Level II core	3
Total semester hours	*16*
SECOND YEAR	
Fall	
MAT 2214	4
MAT 2233	3
Free elective	3
U.S. History & Diversity core	3
Total semester hours	*13*
Spring	
MAT 3013	3
MAT 3103	3
POL 1133 or 1213 (core)	3
Free elective	3
Literature core	3
Total semester hours	*15*
THIRD YEAR	
Fall	
MAT 4013	3
MAT 3123 or MAT 4263	3
POL 1013 (core)	3
Free elective	3
Social & Behavioral Science core	3
Total semester hours	*15*
Spring	
MAT 3213	3
MAT 3233 or MAT 4233	3
Economics core	3
Upper-division Free elective	3
Upper-division MAT or STA elective	3
Total semester hours	*15*
FOURTH YEAR	
Fall	
MAT 4213	3
MAT 4303	3
Free elective	3
Free elective	3
Upper-division MAT elective (not MAT 3253)	3
Total semester hours	*15*
Spring	
MAT 4113	3
Upper-division MAT or STA elective	3
U.S. History & Diversity core	3
Visual & Performing Arts core	3
World Society & Issues core	3
Total semester hours	*15*

Note: Some courses are only offered once a year; fall or spring. Check with the Department of Mathematics for scheduling of courses.

Course Sequence Guide for B.S. Degree in Mathematics with a General Mathematical Studies Concentration (with teacher certification)

This course sequence guide is designed to assist students in completing their UTSA undergraduate Mathematics degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Sciences Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Mathematics, General Mathematical Studies Concentration with teacher certification – Recommended Four-Year Academic Plan

Courses	Credit Hours
FIRST YEAR	
Fall	
COM 1043	3
GEM 1011	1
MAT 1214 (core and major)	4
WRC 1013 (core)	3
Natural Sciences Level I core	3
Total semester hours	*14*
Spring	
CS 1063 or CS 2073	3
GEM 1021	1
MAT 1224	4
WRC 1023 (core)	3
Natural Sciences Level II core	3
Total semester hours	*14*
SECOND YEAR	
Fall	
EDU 2103*	3
GEM 1031	1
MAT 2214	4
MAT 3013	3
U.S. History & Diversity core	3
Total semester hours	*14*
Spring	
EDP 3203	3
MAT 2233	3
MAT 3103	3
Literature core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Summer	
POL 1013 (core)	3
World Society & Issues core	3
Total semester hours	*6*
THIRD YEAR	
Fall	
BBL 3403*	3
MAT 3123 or MAT 4263	3
MAT 3233 or MAT 4233	3
POL 1133 or 1213 (core)	3
Social & Behavioral Science core	3
Total semester hours	*15*
Spring	
MAT 3213	3
MAT 4013	3
SPE 3603*	3
Upper-division MAT elective (not MAT 3253)	3
Economics core	3
Total semester hours	*15*
Summer	
MAT 4113	3
U.S. History & Diversity core	3
Total semester hours	*6*
FOURTH YEAR	
Fall	
C&I 4203	3
EDP 4203	3
MAT 4213	3
MAT 4303	3
RDG 3773	3
Total semester hours	*15*
Spring	
C&I 4646	6
Total semester hours	*6*

* BBL 3403, EDU 2103, and SPE 3603 are not required if student is in the Generating Educational Excellence in Mathematics and Science (GEEMS) program. However, these courses must be replaced with upper-division MAT/STA electives.

Note: Some courses are only offered once a year; fall or spring. Check with the Department of Mathematics for scheduling of courses.

Minor in Mathematics

All students pursuing the Minor in Mathematics must complete 24 semester credit hours. All required and elective mathematics, computer science, and statistics courses must be completed with a grade of "C–" or better.

A. 18 semester credit hours of required courses:

MAT 1214 Calculus I
MAT 1224 Calculus II
MAT 2214 Calculus III*
MAT 2233 Linear Algebra
MAT 3613 Differential Equations I**

* For Computer Science majors, substitute CS 3333/3331 Mathematical Foundations of Computer Science and Recitation.

** Computer Science majors may substitute 3 hours of an approved upper-division mathematics elective.

B. 6 semester credit hours of approved upper-division mathematics electives

To declare a Minor in Mathematics, obtain advice, or seek approval of substitutions for course requirements, students should consult the College of Sciences Undergraduate Advising Center.

DEPARTMENT OF PHYSICS AND ASTRONOMY

The degree programs offered by the Department of Physics and Astronomy reflect its policy of offering the opportunity for a comprehensive education of the highest quality, individualized to the needs and interests of the students. Completion of a Bachelor's degree in Physics allows students entry into one of the highly specialized areas in science and technology, and ability to apply for positions in industry and government, as well as entry into professional and graduate schools.

Bachelor of Science Degree in Physics

The Bachelor of Science degree in Physics provides opportunities for preparation for careers in industry and governmental agencies and for graduate study in physics or related fields.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. At least 39 of the total semester credit hours required for the degree must be at the upper-division level. All major and support work courses (including math, chemistry and computer science courses) must be completed with a grade of "C–" or better.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Physics must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both major requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement. Two of the following courses may be used to satisfy the core requirement in Natural Sciences as well as major requirements: CHE 1103, CHE 1113, PHY 1943, or PHY 1963.

Degree Requirements

A. 54 semester credit hours of physics and astronomy courses:

1. 45 semester credit hours of required courses completed with a grade of "C–" or better:

PHY	1943, 1951	Physics for Scientists I and Laboratory
PHY	1963, 1971	Physics for Scientists II and Laboratory
PHY	2103, 2111	Modern Physics and Laboratory
PHY	2823	Mathematical Physics I
PHY	3203	Classical Mechanics I
PHY	3293	Thermal Physics
PHY	3343	Advanced Physics Laboratory
PHY	3423	Electricity and Magnetism
PHY	3443	Modern Optics
PHY	3513	Electrodynamics
PHY	3583	Mathematical Physics II
PHY	4263	Quantum Mechanics I
PHY	4423	Quantum Mechanics II
PHY	4983	Unifying Concepts in Physics

2. 9 additional approved semester credit hours selected from the following (a maximum of 6 hours from either PHY 4911-3 or PHY 4953 may apply to this requirement):

AST	3013	Fundamentals of Astronomy
AST	3023	Introduction to Astrophysics
PHY	3143	Introduction to Computational Physics
PHY	3313	Materials Physics
PHY	3453	Lasers: Theory and Applications
PHY	3603	Cosmology
PHY	4013	Relativity: Special and General
PHY	4133	Numerical Methods for Physicists
PHY	4203	Classical Mechanics II
PHY	4563	Biophotonics
PHY	4603	Crystallography and Materials Characterization
PHY	4623	Nanotechnology
PHY	4653	Introduction to Micro and Nanotechnology
PHY	4703	Renewable Energy: Solar Energy Convertors
PHY	4833	Molecular Biophysics
PHY	4843	Condensed Matter Theory
PHY	4911-3	Independent Study
PHY	4953	Special Studies in Physics
PHY	4993	Honors Research

B. 33 semester credit hours required in the College of Sciences:

1. 28 semester credit hours of required courses (excluding physics):

CHE	1103	General Chemistry I
CHE	1113	General Chemistry II
CHE	1121	General Chemistry I Laboratory
CS	1073	Introductory Computer Programming for Scientific Applications
MAT	1214	Calculus I
MAT	1224	Calculus II
MAT	2214	Calculus III
MAT	2233	Linear Algebra
MAT	3613	Differential Equations I

2. 5 additional approved semester credit hours in the College of Sciences

Course Sequence Guide for B.S. Degree in Physics

This course sequence guide is designed to assist students in completing their UTSA undergraduate Physics degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Sciences Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Physics – Recommended Four-Year Academic Plan

Courses	Credit Hours
FIRST YEAR	
Fall	
CHE 1103 or CHE 1143 (core and major)	3
CHE 1121*	1
CS 1073	3
MAT 1214 (core and major)	4
WRC 1013 (core)	3
Total semester hours	*14*
Spring	
CHE 1113 or CHE 1153 (core and major)	3
MAT 1224	4
PHY 1943/1951	3/1
WRC 1023 (core)	3
Total semester hours	*14*
SECOND YEAR	
Fall	
MAT 2214	4
MAT 2233	3
PHY 1963/1971	3/1
POL 1013 (core)	3
Literature core	3
Total semester hours	*17*
Spring	
MAT 3613	3
PHY 2103/2111	3/1
PHY 2823	3
PHY 3203	3
U.S. History & Diversity core	3
Total semester hours	*16*
THIRD YEAR	
Fall	
PHY 3293	3
PHY 3423	3
PHY 3443	3
PHY 3583	3
POL 1133 or 1213 (core)	3
Total semester hours	*15*
Spring	
PHY 3343	3
PHY 3513	3
PHY 4263	3
Economics core	3
Social & Behavioral Science core	3
Total semester hours	*15*
FOURTH YEAR	
Fall	
PHY 4423	3
College of Sciences elective	3
Upper-division AST or PHY elective**	3
Upper-division AST or PHY elective**	3
U.S. History & Diversity core	3
Total semester hours	*15*
Spring	
PHY 4983	3
College of Sciences elective	2
Upper-division AST or PHY elective**	3
Visual & Performing Arts core	3
World Society & Issues core	3
Total semester hours	*14*

* These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

** From section A.2. of degree requirements.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Physics and Astronomy for scheduling of courses.

Bachelor of Arts Degree in Physics

The Bachelor of Arts degree in Physics provides opportunities for careers in several professional fields. It is not recommended for students planning to pursue graduate studies in physics or related fields.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

All majors in physics are required to complete all required and elective physics courses with a grade of "C–" or better.

All candidates seeking this degree must fulfill the Core Curriculum requirements and the degree requirements, which are listed below.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Physics must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1214 may be used to satisfy the core requirement in Mathematics as well as a major requirement. Two of the following courses may be used to satisfy the core requirement in Natural Sciences as well as major requirements: CHE 1103, CHE 1113, PHY 1943, or PHY 1963.

Degree Requirements

A. 33 semester credit hours of physics and astronomy courses:

1. 27 semester credit hours of required courses completed with a grade of "C–" or better:

PHY	1943, 1951	Physics for Scientists I and Laboratory
PHY	1963, 1971	Physics for Scientists II and Laboratory
PHY	2103, 2111	Modern Physics and Laboratory
PHY	2823	Mathematical Physics I
PHY	3203	Classical Mechanics I
PHY	3293	Thermal Physics
PHY	3343	Advanced Physics Laboratory
PHY	3423	Electricity and Magnetism

2. 6 additional semester credit hours selected from the following:

AST	3013	Fundamentals of Astronomy
AST	3023	Introduction to Astrophysics
PHY	3143	Introduction to Computational Physics
PHY	3313	Materials Physics
PHY	3443	Modern Optics
PHY	3603	Cosmology
PHY	4013	Relativity: Special and General
PHY	4133	Numerical Methods for Physicists
PHY	4263	Quantum Mechanics I
PHY	4843	Condensed Matter Theory

B. 54 semester credit hours required in the College of Sciences:

1. 22 semester credit hours of required courses (excluding physics):

CHE	1103	General Chemistry I
CHE	1113	General Chemistry II
CHE	1121	General Chemistry I Laboratory
CS	1073	Introductory Computer Programming for Scientific Applications
MAT	1214	Calculus I
MAT	1224	Calculus II
MAT	2214	Calculus III

2. 32 additional approved semester credit hours from the College of Sciences including 18 upper-division hours

Course Sequence Guide for B.A. Degree in Physics

This course sequence guide is designed to assist students in completing their UTSA undergraduate Physics degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Sciences Undergraduate Advising Center for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Physics – Recommended Four-Year Academic Plan

Courses	Credit Hours
FIRST YEAR	
Fall	
CHE 1103 or CHE 1143 (core and major)	3
CHE 1121*	1
CS 1073	3
MAT 1214 (core and major)	4
WRC 1013 (core)	3
Total semester hours	*14*
Spring	
CHE 1113 or CHE 1153 (core and major)	3
MAT 1224	4
PHY 1943/1951	3/1
WRC 1023 (core)	3
College of Sciences elective**	2
Total semester hours	*16*
SECOND YEAR	
Fall	
MAT 2214	4
PHY 1963/1971	3/1
Social & Behavioral Science core	3
U.S. History & Diversity core	3
Total semester hours	*14*
Spring	
PHY 2103/2111	3/1
PHY 2823	3
PHY 3203	3
U.S. History & Diversity core	3
World Society & Issues core	3
Total semester hours	*16*
THIRD YEAR	
Fall	
PHY 3293	3
PHY 3423	3
College of Sciences elective**	3
College of Sciences elective**	3
Literature core	3
Total semester hours	*15*
Spring	
PHY 3343	3
POL 1133 or 1213 (core)	3
College of Sciences elective**	3
College of Sciences elective**	3
Economics core	3
Total semester hours	*15*

Courses	Credit Hours
FOURTH YEAR	
Fall	
POL 1013 (core)	3
College of Sciences elective**	3
College of Sciences elective**	3
College of Sciences elective**	3
Upper-division AST or PHY elective†	3
Total semester hours	*15*
Spring	
College of Sciences elective**	3
College of Sciences elective**	3
College of Sciences elective**	3
Upper-division AST or PHY elective†	3
Visual & Performing Arts core	3
Total semester hours	*15*

* These laboratory courses include a lecture component as indicated on the University Schedule of Classes.

** At least 18 semester credit hours of College of Sciences electives must be at the upper-division level.

† From section A.2. of degree requirements.

Note: Some courses are only offered once a year; Fall or Spring. Check with the Department of Physics and Astronomy for scheduling of courses.

Minor in Physics

The Department of Physics and Astronomy also offers a Minor in Physics, which serves to increase the value of the student's major concentration. It also provides a more solid foundation in physics to those wishing to teach science at the middle and high school levels. All students pursuing the Minor in Physics must complete 21 semester credit hours.

21 semester credit hours of required courses:

PHY	1903, 1911	Engineering Physics I and Laboratory
		or
PHY	1943, 1951	Physics for Scientists I and Laboratory
PHY	1923, 1931	Engineering Physics II and Laboratory
		or
PHY	1963, 1971	Physics for Scientists II and Laboratory
PHY	2103, 2111	Modern Physics and Laboratory
PHY	3203	Classical Mechanics I
PHY	3293	Thermal Physics
PHY	3423	Electricity and Magnetism

To declare a Minor in Physics, obtain advice, or seek approval of substitutions for course requirements, students should consult the College of Sciences Undergraduate Advising Center.

Office of Undergraduate Studies

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10. Office of Undergraduate Studies

Mission Statement

To coordinate the undergraduate curriculum, offer writing and learning communities courses, and provide the academic assessment, support, and direction that students need to successfully complete their educational goals.

The Office of Undergraduate Studies offers students the opportunity to train to become commissioned officers in either the United States Air Force or the United States Army by participating in the Air Force ROTC program or the Army ROTC program, the opportunity to increase their potential for academic success by becoming involved in learning communities, and the opportunity to satisfy degree requirements and develop into skillful writers by taking courses offered by the Writing Program. The Office of Undergraduate Studies also offers the Bachelor of Arts degree in Multidisciplinary Studies and the Bachelor of Science degree in Public Health.

Bachelor of Arts Degree in Multidisciplinary Studies

The Bachelor of Arts degree in Multidisciplinary Studies is a multidisciplinary degree which allows students much flexibility in designing degree programs that relate to their personal academic and career goals. Students will complete the University Core Curriculum requirements and take a cohesive set of courses from three different disciplinary areas.

The Multidisciplinary Studies major permits an interdisciplinary approach to education allowing students the opportunity to acquire a well-rounded educational background and problem-solving skills. The objectives of the program are to develop students that have a solid foundation in the content material of three different disciplines and are skilled in communication, critical thinking and analysis, investigating and solving problems, managing tasks, and relating to others. The program allows students to develop academic themes or topics that fall outside the usual disciplinary boundaries. The degree program will provide a vehicle to achieve baccalaureate degrees for those students whose interests lie in multiple areas.

This degree program is meant to encourage and support creativity, innovation, critical thinking, and integrative learning. The multidisciplinary nature of the program is designed to develop students' ability to combine different fields into a structured format. Since the program involves coursework from departments across the University, it offers students opportunities to capitalize upon diverse personal interests and talents through a combination of study and academic experiences appropriate to meet their educational and long-term career goals.

The minimum number of semester credit hours required for this degree is 120, including Core Curriculum requirement hours. Thirty-nine of the 120 total semester credit hours required for the degree must be at the upper-division level. Students receiving a Bachelor of Arts degree in Multidisciplinary Studies may not receive a double major or a minor.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Multidisciplinary Studies must fulfill University Core Curriculum requirements in the same manner as other students. If courses are taken to satisfy both degree requirements and Core Curriculum requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

Degree Requirements (78 semester credit hours)

All candidates for the Bachelor of Arts degree in Multidisciplinary Studies must complete the following 78 semester credit hours.

A. Multidisciplinary Studies Foundation Courses (6 semester credit hours):

Technology Requirement. All candidates for the degree must complete one of the following courses (3 semester credit hours):

CS	1033	Microcomputer Applications
IS	1403	Business Information Systems Fluency

Communication Requirement. All candidates for this degree must complete one of the following courses (3 semester credit hours):

COM	1043	Introduction to Communication
COM	1053	Business and Professional Speech
COM	2113	Public Speaking
ENG	2413	Technical Writing

B. Multidisciplinary Studies Fields of Study (48 semester credit hours):

All candidates for the degree must select courses to satisfy the requirements of the following three focus areas based on three distinct disciplines:

1. **Focus Area One:** 18 semester credit hours of courses within a single discipline with at least 12 hours at the upper-division level.

2. **Focus Area Two:** 15 semester credit hours of courses within a single discipline with at least 9 hours at the upper-division level.

3. **Focus Area Three:** 15 semester credit hours of courses within a single discipline with at least 9 hours at the upper-division level.

Courses selected to satisfy a focus area must be approved by the Multidisciplinary Studies Program Coordinator and Dean of Undergraduate Studies. Furthermore, the courses used to satisfy each focus area must be completed with at least a 2.00 grade point average. At least one focus area must be selected from a discipline offered by the College of Liberal and Fine Arts or the College of Sciences. No more than one focus area can be selected from a discipline offered by the College of Business.

C. Seminar for Multidisciplinary Studies. All candidates for this degree must complete the following course:

MDS 4983 Senior Seminar for Multidisciplinary Studies.

D. Free Electives (21 semester credit hours):

All candidates for this degree must complete 21 semester hours of free electives, at least 6 of which must be at the upper-division level.

Course Sequence Guide for B.A. Degree in Multidisciplinary Studies

This course sequence guide is designed to assist students in completing their UTSA undergraduate Multidisciplinary Studies degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the Office of Undergraduate Studies for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.A. in Multidisciplinary Studies – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
HIS 1043, 1053, or 2053 (core)	3
WRC 1013 (core)	3
Focus Area 1 lower-division course	3
Mathematics core	3
Social & Behavioral Science core	3
Total semester hours	*15*
Spring	
CS 1033 or IS 1403	3
HIS 1043, 1053, or 2053 (core)	3
WRC 1023 (core)	3
Focus Area 2 lower-division course	3
Natural Sciences Level I core	3
Total semester hours	*15*
SOPHOMORE YEAR	
Fall	
COM 1043, 1053, 2113, or ENG 2413	3
POL 1013 (core)	3
Focus Area 1 lower-division course	3
Focus Area 3 lower-division course	3
Natural Sciences Level II core	3
Total semester hours	*15*
Spring	
POL 1133 or 1213 (core)	3
Focus Area 2 lower-division course	3
Focus Area 3 lower-division course	3
Literature core	3
Visual & Performing Arts core	3
Total semester hours	*15*
JUNIOR YEAR	
Fall	
ECO 2003, 2013, or 2023 (core)	3
Focus Area 1 upper-division course	3
Focus Area 2 upper-division course	3
Free elective	3
World Society & Issues core	3
Total semester hours	*15*
Spring	
Focus Area 1 upper-division course	3
Focus Area 2 upper-division course	3
Focus Area 3 upper-division course	3
Free elective	3
Free elective	3
Total semester hours	*15*
SENIOR YEAR	
Fall	
Focus Area 1 upper-division course	3
Focus Area 2 upper-division course	3
Focus Area 3 upper-division course	3
Free elective	3
Free elective (upper-division)	3
Total semester hours	*15*
Spring	
MDS 4983	3
Focus Area 1 upper-division course	3
Focus Area 3 upper-division course	3
Free elective	3
Free elective (upper-division)	3
Total semester hours	*15*

Bachelor of Science Degree in Public Health

The Bachelor of Science degree in Public Health is offered with an interdisciplinary curriculum designed for students who are interested in gaining knowledge and developing skills needed in a variety of health care related areas, including biostatistics, environmental science, health and public administration, epidemiology, and health behavior. The degree requirements consist of the university core curriculum, major core requirements, elective courses in areas of specializations, a foreign language, and an internship. The major core is multidisciplinary introducing students to the fundamental subjects and the essential knowledge necessary for working in any field related to public health. The elective courses allow students to concentrate in one of the areas of specialization.

The degree program prepares students for health care related careers in government, private, and nonprofit organizations. In addition, graduates of this program will be competent in pursuing graduate studies in a variety of academic fields, including public health, allied health, public policy, nutrition, business, and law. It can also provide students with a pathway to advanced studies in medicine or dentistry if the students use the electives to fulfill the additional admission requirements for medical and dental schools.

The degree program is offered in two concentrations: (1) Epidemiology and Disease Control and (2) Health Promotion and Behavioral Science. The Epidemiology and Disease Control concentration is offered by the Department of Sociology of the College of Liberal and Fine Arts (COLFA) and students seeking this concentration and who are not freshmen will be advised by the COLFA Advising Center. The Health Promotion and Behavioral Science concentration is offered by the Department of Health and Kinesiology of the College of Education and Human Development (COEHD) and students seeking this concentration and who are not freshmen will be advised by the COEHD Advising Center. Bachelor of Science in Public Health majors who are freshmen will be advised by the Colleges' Freshman Advising Center (CFAC).

The minimum number of semester credit hours required for this degree, including Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

Core Curriculum requirements (42 semester credit hours)

Students seeking the Bachelor of Science degree in Public Health must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

STA 1053 may be used to satisfy the core requirement in Mathematics as well as a major requirement. BIO 1404 and BIO 1413 may be used to satisfy the core requirement in Natural Sciences as well as major requirements.

Degree Requirements

All candidates for the Bachelor of Science degree in Public Health must complete the following 87 semester credit hours, which includes 9 semester credit hours of core curriculum requirements.

A. Public Health Foundation courses. All candidates for this degree must complete the following 37 semester credit hours of coursework:

BIO	1404	Biosciences I
BIO	1413	Biosciences II
HTH	3503	Theories of Health Behavior
HTH	4503	Human Disease and Epidemiology
HTH	4543	Environmental Health and Safety
MGT	3013	Introduction to Organization Theory, Behavior, and Management
PUB	1113	Introduction to Public Health
PUB	2113	Data Management in Public Health
SOC	3223	Population Dynamics and Demographic Techniques
SOC	4043	Global Health
SOC	4053	Health Care System
STA	1053	Basic Statistics

B. Public Health Concentrations (18 semester credit hours). All candidates for the degree in Public Health must complete the requirements for one of the following concentrations.

1. Epidemiology and Disease Control Concentration
Requirements for this concentration updated November 1, 2012

6 semester credit hours of required courses:

SOC	3323	Introduction to Social Research
SOC	4683	Health Disparities

Select at least 12 semester credit hours from the following list of courses:

ANT	3523	Medical Anthropology
BIO	2083	Human Anatomy
BIO	2091	Human Anatomy Laboratory
BIO	2103	Human Physiology
BIO	2111	Human Physiology Laboratory
BIO	2313	Genetics
BIO	2322	Genetics Laboratory
BIO	3413	Advanced Physiology
BIO	3422	Advanced Physiology Laboratory
BIO	3433	Neurobiology
BIO	3613	The Biology of Aging
BIO	3713	Microbiology
BIO	3722	Microbiology Laboratory
GRG	3443	Medical Geography
PUB	3413	Behavioral Epidemiology
PUB	3613	Etiology 1: Epidemiologic Methods to Investigate Outbreaks and New Epidemics
PUB	4613	Etiology 2: Epidemiologic Methods to Investigate Chronic Disease, Exposure, and Risk
SOC	3213	Medical Sociology
SOC	4073	Social and Behavioral Theories in Public Health

2. Health Promotion and Behavioral Science Concentration

   Select at least 18 semester credit hours from the following list of courses:

   ANT 3523 Medical Anthropology
   BIO 2003 Biology of Human Reproduction
   BIO 2043 Nutrition
   BIO 3613 The Biology of Aging
   BIO 4813 Brain and Behavior
   HTH 3043 Principles of Weight Management
   HTH 3513 Community Health
   HTH 3523 Worksite Health Promotion
   HTH 3533 Drugs and Health
   HTH 3543 Growth and Development
   HTH 3553 Emotional Wellness
   HTH 3563 Child and Adolescent Health Promotion
   HTH 4513 Consumer Health
   HTH 4523 Understanding Human Sexuality
   HTH 4533 Nutrition and Health
   KIN 2123 Fitness and Wellness Concepts
   KIN 4023 Exercise Psychology
   PSY 4253 Psychology and Health
   SOC 2023 Social Context of Drug Use
   SOC 3213 Medical Sociology

C. Advanced Public Health Requirement (6 semester credit hours):

   All candidates for this degree must complete 6 hours of an internship in public health.

   PUB 4933 Public Health Internship (repeated once)

D. Foreign Language (6 semester credit hours):

   All candidates for this degree must complete 6 hours of coursework in a single foreign language.

E. Free Electives (up to 20 semester credit hours):

   All candidates for this degree must complete up to 20 hours of free electives to meet the 120 hour minimum for the degree, including a sufficient number of electives at the upper-division level to meet the UTSA minimum of 39 upper-division hours.

Course Sequence Guide for B.S. Degree in Public Health

This course sequence guide is designed to assist students in completing their UTSA undergraduate Public Health degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the College of Liberal and Fine Arts Undergraduate Advising Center (for Epidemiology and Disease Control Concentration) or the College of Education and Human Development Advising and Certification Center (for Health Promotion and Behavioral Science Concentration) for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during Summer terms to reduce course loads during long semesters.

B.S. in Public Health, Epidemiology and Disease Control Concentration – Four-Year Academic Plan (Requirements for this concentration updated November 1, 2012)

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
HIS 1043, 1053, or 2053 (core)	3
PUB 1113	3
SOC 1013 (core)	3
STA 1053 (core and major)	3
WRC 1013 (core)	3
Total semester hours	*15*
Spring	
BIO 1404 (core and major)	4
HIS 1043, 1053, or 2053 (core)	3
WRC 1023 (core)	3
Free elective	3
Visual & Performing Arts core	3
Total semester hours	*16*
SOPHOMORE YEAR	
Fall	
HTH 4503	3
Free elective	3
Free elective	3
Free elective	3
Literature core	3
Total semester hours	*15*
Spring	
BIO 1413 (core and major)	3
ECO 2003, 2013, or 2023 (core)	3
SOC 3223	3
PUB 2113	3
World Society & Issues core	3
Total semester hours	*15*
JUNIOR YEAR	
Fall	
MGT 3013	3
POL 1013 (core)	3
SOC 4043	3
Free elective (upper-division)	3
Foreign language (semester I)	3 or 4
Total semester hours	*15 or 16*
Spring	
HTH 4543	3
POL 1133 or 1213 (core)	3
SOC 3323	3
SOC 4053	3
Foreign language (semester II)	3 or 4
Total semester hours	*15 or 16*

Courses	Credit Hours
SENIOR YEAR	
Fall	
HTH 3503	3
PUB 4933 (repeated*)	6
Concentration course (upper-division)	3
Concentration course (upper-division)	3
Total semester hours	*15*
Spring	
SOC 4683	3
Concentration course (upper-division)	3
Concentration course (upper-division)	3
Free elective (upper-division)	3
Free elective (to meet 120 hour minimum)	2
Total semester hours	*14*

*May be repeated in a different semester.

B.S. in Public Health, Health Promotion and Behavioral Science Concentration – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
HIS 1043, 1053, or 2053 (core)	3
PUB 1113	3
SOC 1013 (core)	3
STA 1053 (core and major)	3
WRC 1013 (core)	3
Total semester hours	*15*
Spring	
BIO 1404 (core and major)	4
HIS 1043, 1053, or 2053 (core)	3
POL 1013 (core)	3
WRC 1023 (core)	3
Free elective	3
Total semester hours	*16*
SOPHOMORE YEAR	
Fall	
BIO 1413 (core and major)	3
HTH 3503	3
POL 1133 or 1213 (core)	3
Literature core	3
Visual & Performing Arts core	3
Total semester hours	*15*
Spring	
ECO 2003, 2013, or 2023 (core)	3
PUB 2113	3
SOC 3223	3
Free elective	3
World Society & Issues core	3
Total semester hours	*15*
JUNIOR YEAR	
Fall	
MGT 3013	3
SOC 4043	3
Free elective	3
Free elective	3
Foreign language (semester I)	3 or 4
Total semester hours	*15 or 16*
Spring	
HTH 4503	3
HTH 4543	3
SOC 4053	3
Concentration course	3
Foreign language (semester II)	3 or 4
Total semester hours	*15 or 16*
SENIOR YEAR	
Fall	
Concentration course	3
Concentration course	3
Concentration course	3
Free elective (upper-division)	3
Free elective (upper-division)	3
Total semester hours	*15*
Spring	
PUB 4933 (repeated)	6
Concentration course (upper-division)	3
Concentration course (upper-division)	3
Free elective (to meet 120 hour minimum)	2
Total semester hours	*14*

AIR FORCE AND ARMY RESERVE OFFICER TRAINING CORPS PROGRAMS

Air Force ROTC: UTSA students may enroll in courses that are required in order to become a commissioned officer in the United States Air Force. The Air Force Reserve Officer Training Corps (ROTC) is voluntary and open to all qualified students, male and female. All courses are held on the UTSA campus.

Trinity University, St. Mary's University, University of the Incarnate Word, Our Lady of the Lake University, or any Alamo Colleges student may enroll in Air Force ROTC at UTSA. These students will attend ROTC classes on the UTSA campus.

Nursing students at The University of Texas Health Science Center may also enroll in Air Force ROTC at UTSA.

Army ROTC: UTSA students may pursue courses in military science designed to develop the knowledge and skills required for a commission as an officer in the U.S. Army. The Army Reserve Officer Training Corps (ROTC) is open to all qualified students on a voluntary basis at UTSA, San Antonio College, Wayland Baptist University and The University of Texas Health Science Center. All courses for those enrolled in the program are held on the UTSA campus.

Air Force Reserve Officer Training Corps Program

To obtain a commission as an officer in the United States Air Force, a baccalaureate degree in one of the disciplines offered by UTSA and completion of a Four-Year AFROTC Program is required. The full four-year program may be tailored down to less than four years based on the student's academic progress and the future needs of the Air Force. For complete details on completing AFROTC in less than four years, contact an Air Force ROTC advisor at (210) 458-4624. Walk-ins are also welcome at NPB 1.220.

Credit for aerospace studies courses may be applied toward a baccalaureate degree, but are generally classified as free electives. There is a maximum number of semester credit hours of aerospace studies that may be applied to the degree requirements for each major. Credit for aerospace studies courses awarded by another accredited college or university is accepted by UTSA as credit, within the same limitations as aerospace studies credit earned at UTSA.

Program Requirements: This program does not require a formal application for admission and consists of 16 semester credit hours of aerospace studies. Any student wishing to participate in the freshman- and sophomore-level courses of Air Force ROTC may enroll for these classes at the same time and in the same manner as for other UTSA courses. The freshman and sophomore courses comprise the General Military Course (GMC). Membership as a cadet in the GMC does not confer any military status or commitment upon the student. During the GMC, students can compete for admission to the Professional Officer Course (POC), which is described below. Cadets in the Four-Year Program attend a paid four-week field training course the summer between their sophomore and junior years.

All students in Air Force ROTC are issued books and uniforms for use in ROTC classes. In addition, all POC students enlist in the Air Force Reserve and receive a monthly subsistence allowance.

A required leadership laboratory graded on a pass/fail basis is conducted in conjunction with all aerospace studies courses. This laboratory offers students the opportunity to learn and practice the skills and techniques required to be an Air Force officer within a realistic Air Force organizational framework. It also provides cadets with opportunities to learn about the conduct of Air Force missions and operations through guest lectures and field trips. Cadets are also required to attend physical fitness training a minimum of two times a week which will help prepare them to pass the required physical fitness test.

Cadets may apply for Air Force ROTC scholarships. Three-and-a-half-, three-, two-and-a-half-, and two-year scholarships are available to cadets who meet the basic minimum requirements (achieving and maintaining a 2.5 grade point average, passing a physical fitness test, and passing a physical). Students with questions are encouraged to come by NPB 1.220 or call an Air Force ROTC scholarship advisor at (210) 458-4624.

Minor in Aerospace Studies

This minor is designed to enhance the aerospace studies (Air Force Reserve Officer Training Corps) curriculum. A Minor in Aerospace Studies (ASC) will develop a well-rounded perspective of a future Air Force officer's role and decision-making ability in political, sociological, historical, and geographical arenas.

All students pursuing a Minor in Aerospace Studies must complete 20 semester credit hours.

A. 2 semester credit hours of required core courses:

ASC	2031	The Evolution of United States Air Force Air and Space Power I
ASC	2041	The Evolution of United States Air Force Air and Space Power II

B. 9 semester credit hours (6 of which must be at the upper-division level) selected from the following:

ASC	1031	The Foundation of the United States Air Force I
ASC	1041	The Foundation of the United States Air Force II
ASC	3013	Air Force Leadership Studies I
ASC	3023	Air Force Leadership Studies II
ASC	4013	National Security Affairs/Preparation for Active Duty I
ASC	4023	National Security Affairs/Preparation for Active Duty II

C. 9 semester credit hours (6 of which must be at the upper-division level) selected from the following:

GRG	1023	World Regional Geography
GRG	3314	Introduction to Geographic Information Systems
GRG	3643	Political Geography
HIS	3543	History of Modern Warfare
HIS	3823	History of American Foreign Relations
POL	1213	Topics in Texas and American Politics
POL	2603	International Politics
POL	3293	Political Movements
POL	3403	European Politics

POL	3423	Geopolitics of Russia and Eurasia
POL	3433	Governments and Politics of Southeast Asia
POL	3443	Governments and Politics of East Asia
POL	3463	Politics of the Third World
POL	3493	Politics of the Middle East
POL	3503	American Foreign Policy since World War II
POL	3523	Force in International Politics
POL	3563	Current Issues in World Politics
PSY	2533	Social Psychology

To declare a Minor in Aerospace Studies, obtain advice, or seek approval of substitutions for course requirements, students should consult the professor of aerospace studies in Undergraduate Studies in conjunction with an advisor in the office of Undergraduate Studies Support and Technology Services.

Army Reserve Officer Training Corps Program

To obtain a commission as an officer in the United States Army, students must complete either the Four-Year Program or the Two-Year Program in Military Science and be a full-time student pursuing a baccalaureate or graduate degree in one of the disciplines offered by UTSA.

Credit for military science courses may be applied toward a baccalaureate degree, but mainly as free electives. Each major stipulates a maximum number of hours of military science that may be applied toward the degree requirements. Credit for military science courses awarded by another accredited college or university is accepted by UTSA as credit, within the same limitations as military science credit earned at UTSA.

Four-Year Program: This program consists of 18 semester credit hours of military science courses and is offered in two parts: a Basic Course and an Advanced Training Course. Registration is accomplished at the same time and in the same manner as for other UTSA courses. The Basic Course consists of the first- and second-year courses: MSC 1011, MSC 1021, MSC 2012, and MSC 2022, which are designed for beginning students who want to qualify for entry into the Advanced Training Course and those who may want to try military science without incurring a military commitment. A number of popular and challenging extracurricular activities are associated with these courses. Students can qualify for entry into the Advanced Training Course by completing the Leader's Training Course, a paid summer internship program.

Students may compress the Basic Course into one academic year with the approval of the professor of military science. The Basic Course may be waived without credit for students with prior military service and/or junior ROTC.

Two-Year Program: This program consists of the Advanced Training Course, which incorporates the last two years of the Four-Year Program. The Advanced Training Course consists of MSC 3013, MSC 3023, MSC 4013, and MSC 4023. It is open only to students who have completed the Basic Course or earned placement credit. The Advanced Training Course is designed to qualify a student for a commission as an officer in the United States Army. Students must complete MSC 3013, MSC 3023, MSC 4013, and MSC 4023 and the 31-day paid leadership developmental advanced course in the summer, usually between the junior and senior years. Courses must be taken in sequence unless otherwise approved by the professor of military science. Students receive a stipend each month during the school year.

The Army ROTC program offers competitive scholarships for up to four years to select students. These scholarships provide tuition, fees, book allowance and a monthly subsistence allowance.

Participation in a leadership laboratory is required in conjunction with all courses. The laboratory provides the opportunity to acquire leadership skills and experiences that will enhance a student's ability to perform as an Army officer.

All ROTC classes require each enrolled student to participate in physical fitness training and to take the Army Physical Fitness Test each semester.

Students enrolled in Army ROTC courses are furnished, free of charge, complete uniforms, texts, and necessary equipment.

The program requirements for the Basic and Advanced courses are as follows:

MSC	1011	Introduction to Army ROTC
MSC	1021	Introduction to Tactical Leadership
MSC	2012	Foundations of Leadership
MSC	2022	Foundations of Tactical Leadership
MSC	3013	Leading Small Organizations I
MSC	3023	Leading Small Organizations II
MSC	4013	Adaptive Leadership
MSC	4023	Leadership in a Complex World

Minor in Military Management and Leadership

This minor is designed to enhance the military science (Army Reserve Officer Training Corps) curriculum. A Minor in Military Management and Leadership (MSL) will develop a well-rounded perspective of a future Army officer's role and decision-making ability in political, sociological, historical, and geographical arenas.

All students pursuing the minor must complete 21 semester credit hours.

A. 12 semester credit hours of core military science and leadership coursework:

MSC	3013	Leading Small Organizations I
MSC	3023	Leading Small Organizations II
MSC	4013	Adaptive Leadership
MSC	4023	Leadership in a Complex World

B. 9 semester credit hours of electives chosen from the following:

GLA	3013	Introduction to Global Analysis
GLA	4013	The Intelligence Community and World Affairs
GRG	3643	Political Geography
HIS	2543	Introduction to Islamic Civilization
HIS	2553	Introduction to East Asian Civilization
HIS	3543	History of Modern Warfare
HIS	3823	History of American Foreign Relations
MGT	3013	Introduction to Organization Theory, Behavior, and Management

POL 3433 Governments and Politics of Southeast Asia
POL 3463 Politics of the Third World
POL 3493 Politics of the Middle East
POL 3523 Force in International Politics
POL 3563 Current Issues in World Politics

To declare a Minor in Military Management and Leadership, obtain advice, or seek approval of substitutions for course requirements, students should consult the professor of military science in Undergraduate Studies in conjunction with an advisor in the office of Undergraduate Studies Support and Technology Services.

LEARNING COMMUNITIES AND FRESHMAN SEMINAR PROGRAM

Learning Communities assist freshmen in enhancing their academic and personal success by linking up to three Core Curriculum courses together with a group of 25 freshmen who share a common interest, major, or field of study.

All Learning Communities include a Freshman Seminar course which varies in topic. The focus of this course is to connect students to their peers and faculty while providing academic opportunities such as research projects, writing assignments, and group work. The program not only assists freshmen in making the transition into college but also enhances skills important to succeed in college and beyond.

WRITING PROGRAM

Writing Program courses are designed to help students become the most proficient writers possible. The writing process is stressed, along with purpose of audience, correctness, research techniques, and visual layout. Developmental Writing is designed to prepare students for success in Freshman Composition. Freshman Composition I focuses on informative academic writing, while Freshman Composition II addresses argument and persuasion. Freshman Composition I and II papers concentrate on use of source material and proper documentation of that material. All of the classes include a minimal oral component, providing time for students to practice and sharpen their oral presentation skills. While individual courses differ, all three courses entail some computer use. These courses prepare students for demands of the academic and professional worlds. In addition, WRC 3013 Writing Strategies for the Pre-law Student and WRC 4123 Topics in Writing further prepare students for careers in which writing is a focus.

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Honors College

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11. Honors College

The mission of the Honors College is to provide enhanced educational opportunities for selected, motivated, enthusiastic, diverse, and inquisitive students and to foster the pursuit of excellence in undergraduate higher education. The underlying philosophy of the program is that well-educated individuals should understand broad, interdisciplinary perspectives while demonstrating expertise in their chosen field.

The Honors College is open to students from all academic disciplines. The Honors College has different options for students interested in pursuing either a specific field of study with Honors distinction(s) or a Bachelor of Arts (B.A.) in Honors Studies. Regardless of the track chosen, members of the Honors College pursue a rigorous academic program which satisfies all requirements of their academic departments and colleges and goes beyond those requirements to enhance achievement. The Honors College offers small classes with greater opportunities for student participation, increased student-faculty contact, more individual attention, lively discussions of important issues, special interdisciplinary seminars, opportunities for study abroad, community service and internships, and supervised capstone experiences, all designed to challenge talented students.

Throughout a student's program of study, the Honors College emphasizes breadth of academic experience. In the junior and senior years, Honors students are encouraged to gain expertise in their academic field through Honors work in the major and an Honors capstone experience. Students who pursue the B.A. in Honors Studies or Highest Honors produce an honors capstone project under the direction of a faculty member from the student's major department.

Participation in the Honors College supplements, but does not replace, work in a major field. Credits earned in Honors College courses, however, may also be used to satisfy Core Curriculum requirements or other degree requirements. The Honors College Advising Center assists in assuring that students meet all requirements for their degree plans.

Admission and Retention

Admission

Students must make special application to be considered for admission to the Honors College either as an entering freshman or as a continuing UTSA or transfer student. In general, threshold application requirements for incoming freshmen are a composite SAT (critical reading and math only) of 1200 or above, a composite ACT score of 27 or above, and/or graduation in the top 10 percent of the high school class. However, the Honors College applies a holistic review approach to student admission by considering such factors as writing skills, student leadership, special skills and abilities, and special circumstances. Therefore, students whose SAT, ACT, or class rank do not meet the threshold requirement may still gain admission if they offer a compelling reason why they should be part of the program, just as students who meet those requirements are not guaranteed admission. For continuing UTSA students and transfer students, eligibility to apply is based on a college grade point average (GPA) of 3.4 or better. Admission is competitive and contingent upon the pool of applicants for any given year. Admission information is posted online at http://utsa.edu/honors/.

Retention in the Honors College

After being accepted into the Honors College, a student must maintain a minimum UTSA GPA of 3.25 and demonstrate adequate progress toward completion of the Honors degree requirements. A student is considered to be in good standing if he or she maintains a minimum UTSA grade point average of 3.25. Only students in good standing qualify for Honors graduation.

Students whose UTSA grade point average falls below 2.75 will automatically be declared academically ineligible for Honors College membership. Students whose UTSA grade point average falls below 3.25 but is above 2.75 are placed on Honors probation, and they will be allowed to retain membership in the Honors College until their UTSA grade point average reaches 3.25, as long as their grade point average in each subsequent term is 3.25 or above. If a student on probation earns a term GPA of less than 3.25, he or she will be declared academically ineligible for Honors College membership.

Students who have been declared academically ineligible for Honors College membership may apply for readmission if they have attained a minimum UTSA grade point average of 3.25.

Dual College Membership

All Honors College students, except those pursuing the B.A. degree in Honors Studies, are also members of a degree-granting college. Admission to the Honors College is independent of admission to any other academic unit.

Facilities and Services

The UTSA Honors College provides the following opportunities to members of the College:

Advising and Priority Registration. The Honors College Advising Center provides academic advising for all honors students. Honors College students are given priority registration if they register for the following semester through the Honors College and have completed at least one Honors course in the past year or include an Honors course in their schedule.

Honors Scholarships. The Honors College, in conjunction with the UTSA Scholarship Office, annually awards numerous Honors scholarships. The majority of Honors scholarships are renewable for up to three years for students who maintain the requisite 3.25 grade point average and complete an Honors course each semester. More information on scholarships is available in the Office of the Dean of the Honors College.

Honors Undergraduate Research Programs. The Honors Undergraduate Research Program assists students in finding research assistantships in their academic disciplines. In addition, the Honors College Research and Travel Grant Program provides students working on an Honors capstone project with financial assistance for their projects.

Honors Study Abroad. The Honors Study Abroad Program works with the Office of International Programs to offer opportunities for Honors students to acquire new knowledge and understanding of the people, events, movement, ideas, and objects of cultures other than their own. Scholarships are available through the International Education Fund.

Honors Internships. Honors students are encouraged to work in their fields prior to graduation. Internships may be assigned locally, nationally, and internationally. Students may earn credit for Honors internship experiences.

Undergraduate and Graduate Fellowships. The Honors College coordinates on-campus efforts to assist graduating students interested in applying for graduate awards such as Rhodes Scholarships, Marshall Scholarships, Mitchell Scholarships, Fulbright Scholarships, National Science Foundation (NSF) Fellowships, and Ford Foundation Diversity Fellowships. Additionally, the Honors College staff identifies and assists students interested in undergraduate awards such as Harry S. Truman Scholarships and Goldwater Scholarships.

Participation in Honors Councils. The UTSA Honors College is an institutional member of the National Collegiate Honors Council (NCHC), the Great Plains Honors Council (GPHC), and the Council of Honors Administrators in Texas (CHAT). These organizations support honors education in the United States and address issues that face higher education and honors programs across the country. Honors students are encouraged to participate in these organizations and are, thus, able to meet and interact with honors students from across the region and nation.

Recognition for Honors Graduation. Members of the Honors College who complete the requirements for any form of College Honors qualify to graduate with an Honors College diploma and to participate in a special Honors College graduation ceremony where they receive an Honors stole to wear with their academic regalia. Recognition for Honors graduation includes a notation on the transcript and diploma and mention in the commencement bulletin.

Honors College Requirements

To graduate with an Honors College diploma, a student must be enrolled in the Honors College and must have a minimum UTSA grade point average of 3.25 at the time of graduation.

Business Honors

Bachelor of Business Administration (B.B.A.) majors who have been admitted to the Honors College may earn Business Honors if they maintain a minimum UTSA grade point average of 3.25 and complete an Honors section of five of the Common Body of Knowledge (CBK) courses. Business Honors classes emphasize class discussion, presentations, and business research.

General Honors

General Honors is designed to provide students with a broad, interdisciplinary Honors experience, primarily through Honors core curriculum coursework. Because the General Honors experience is targeted primarily at lower-division Honors coursework, students are only eligible to earn General Honors if they enter the Honors College with fewer than 30 hours (not including AP, CLEP, or dual credit hours).

General Honors Requirements

21 semester credit hours of Honors coursework.

1. 3 semester credit hours selected from the following (must be taken in an Honors section):

   ANT 2053 Introduction to Cultural Anthropology
   CSH 1213 Topics in World Cultures
   HUM 2093 World Religions
   IDS 2213 World Civilization since the Fifteenth Century

2. 3 semester credits hours selected from the following:

   HON 3223 Honors Seminar in Social & Behavioral Sciences
   HON 3233 Honors Seminar in Arts & Humanities
   HON 3243 Honors Seminar in Business & the Professions
   HON 3253 Honors Seminar in the Sciences

3. 15 additional semester credit hours of Honors elective coursework, including no more than 6 semester credit hours of Honors contract coursework

Leadership Honors

Leadership Honors is designed to provide students with the opportunity to expand their leadership capabilities and to explore possibilities for enhancing learning capacities and strategic thinking. Students who pursue Leadership Honors have the opportunity to explore a new model of leadership that makes sense in the emerging competitive environment in which humans work and live. Students are asked to enhance their understanding of leadership and hone their personal leadership skills through coursework and action. Students who select to follow Leadership Honors may select from two different options, one that involves students in the College of Business's Leadership Challenge program and one that involves students in the University of Texas System's Archer Fellows Program.

Leadership Honors Requirements

21 semester credit hours of Honors coursework.

1. 3 semester credit hours selected from the following (must be taken in an Honors section):

   ANT 2053 Introduction to Cultural Anthropology
   CSH 1213 Topics in World Cultures

HUM 2093 World Religions
IDS 2213 World Civilization since the Fifteenth Century

2. 18 required semester credit hours of Honors coursework:

Option 1

MGT 4953 Special Studies in Management: Leadership Challenge
HON 4933 Honors Internship (or an internship in the major)

12 semester credit hours of elective Honors coursework, including no more than 6 hours of Honors contract work

Option 2

HON 4936 Honors Internship

9 semester credit hours of HON 3223 taken through the UTSA Archer Fellows Program

3 semester credit hours of elective Honors coursework

Highest Honors

Highest Honors is the most rigorous and most prestigious Honors degree program available through the Honors College. What distinguishes Highest Honors from the other Honors options is the opportunity to pursue greater depth in one's academic field. To earn Highest Honors, students must complete an Honors capstone project under the supervision of a capstone advisor. The Honors capstone project must be signed by a three-member committee approved by the Assistant Director for Undergraduate Research.

Highest Honors Requirements

30 semester credit hours of Honors coursework.[1]

1. 3 semester credit hours selected from the following (must be taken in an Honors section):

ANT 2053 Introduction to Cultural Anthropology
CSH 1213 Topics in World Cultures
HUM 2093 World Religions
IDS 2213 World Civilization since the Fifteenth Century

2. 6 semester credit hours selected from the following:

HON 3223 Honors Seminar in Social & Behavioral Sciences
HON 3233 Honors Seminar in Arts & Humanities
HON 3243 Honors Seminar in Business & the Professions
HON 3253 Honors Seminar in the Sciences

3. 21 semester credit hours of Honors elective coursework, including no more than 9 semester credit hours of Honors contract coursework. (It is highly recommended that students complete 6 hours of Honors Capstone Project to count toward their 21 hours of Honors elective coursework.)

4. Completion of an Honors capstone project

International Distinction

Students who have been admitted to the Honors College and pursue any of the Honors distinctions may also qualify for graduation with international distinction. Students qualify for graduation with international distinction if they: (1) complete all the requirements for Business Honors, General Honors, Leadership Honors, or Highest Honors; and (2) either master a foreign language at the 2023 level or above or participate in a study-abroad experience for at least one Spring or Fall semester.

Bachelor of Arts Degree in Honors Studies

The Honors College offers a Bachelor of Arts degree in Honors Studies. The Bachelor of Arts (B.A.) in Honors Studies may be used as preparation for careers in government service or as an opportunity to prepare for graduate or professional study in areas such as business, pre-med, pre-law, counseling, or social work. The minimum number of semester credit hours required for the B.A. in Honors Studies, including the Core Curriculum requirements, is 120, at least 39 of which must be at the upper-division level and at least 30 of which must be honors hours. Students selecting this degree also choose an academic specialization.

Students are only eligible to pursue the B.A. in Honors Studies if they have been accepted into the Honors College. Only students in good standing with the Honors College qualify for graduation with the B.A. in Honors Studies.

Core Curriculum Requirements (42 semester credit hours)

Students seeking the Bachelor of Arts degree in Honors Studies must fulfill University Core Curriculum requirements in the same manner as other students. The courses listed below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 3–5 of this catalog.

MAT 1073 (or higher) is recommended to satisfy the core requirement in Mathematics. One of the following courses (in an honors section) is recommended to satisfy the core requirement in World Society and Issues: ANT 2053, CSH 1213, HUM 2093, or IDS 2213.

Degree Requirements (78 semester credit hours)

A. Honors Core Requirements. 3 semester credit hours selected from the following:
(An honors section of one of these courses must be completed to receive credit for the major requirements.)

ANT 2053 Introduction to Cultural Anthropology
CSH 1213 Topics in World Cultures

1 Students who enter with 45+ hours may be granted a waiver of 6 hours of Honors coursework to reduce the required number of Honors hours from 30 to 24 hours. This reduction of hours will be reflected in section 3 of the Highest Honors requirements, reducing the number of hours from 21 to 15.

HUM 2093 World Religions
IDS 2213 World Civilization since the Fifteenth Century

Any of these courses may also be used to satisfy the World Society and Issues component of the Core Curriculum. If a course is used to satisfy both the Core and major requirements, 3 additional hours of elective credit must be completed.

B. 21 semester credit hours of the major:

1. Arts and Humanities Sequence. 6 semester credit hours selected from the following:

   HON 3233 Honors Seminar in Arts & Humanities

   AND

   3 semester credit hours selected from the following:

   HUM 3013 History of Ideas
   HUM 3023 The Medieval World
   HUM 3033 Renaissance Ideas
   HUM 3043 Classicism and Enlightenment
   HUM 3053 The Romantic Age
   HUM 3063 The Modern World

2. Social and Behavioral Science Sequence. 6 semester credit hours selected from the following:

   HON 3223 Honors Seminar in Social & Behavioral Sciences

   AND

   3 semester credit hours selected from the following: (Depending on the social science course and concentration selected, students should verify with the Honors College Advising Office that core courses are used to meet prerequisites for upper-division coursework.)

   AAS 4013 Topics in African American Studies
   AMS 3343 Studies in Race and Ethnicity
   ANT 3603 Sex, Gender, and Culture
   POL 3083 Race and Ethnic Politics in the United States
   POL 3303 Race, Ethnicity and Public Policy
   SOC 3043 Race and Ethnic Relations

3. Science and Mathematics Sequence. 6 semester credit hours selected from the following:

   HON 3253 Honors Seminar in the Sciences

   AND

   3 additional hours of Level Two science (This course and the two core science courses must come from at least two disciplines.)

4. Language (3 semester credit hours):

   3 semester credit hours in a foreign language at the 2023 level or above. (Students who are not prepared to take a foreign language at the 2023 level will need to use elective hours to complete lower-level courses in a foreign language.)

C. Honors Service (3 semester credit hours):

   HON 2201 Honors Community Service (taken 3 times)
   or
   HON 4933 Honors Internship

D. Honors Capstone Project (6 semester credit hours):

   HON 4993 Honors Capstone Project (taken twice in subsequent semesters)

E. Honors Concentration (24 semester credit hours – 15 hours must be in upper-division courses)

   Designed in conjunction with an Honors Advisor and with the approval of the Dean of the Honors College.

   Student may "split" concentration into two areas (12 semester credit hours in each area with 6–9 hours in upper-division courses in each) with approval of the Dean of the Honors College.

F. Elective Courses

   24 semester credit hours of electives to meet the 120 hour minimum, including 3 hours at the upper-division level for those who choose community service over the internship.

Course Sequence Guide for B.A. Degree in Honors Studies

This course sequence guide is designed to assist students in completing their UTSA undergraduate Honors Studies degree requirements. *This is merely a guide and students must satisfy other requirements of this catalog and meet with advisors in the Honors College for individualized degree plans.* Progress within this guide depends upon such factors as course availability, individual student academic preparation, student time management, work obligations, and individual financial considerations. Students may choose to take courses during summer terms to reduce course loads during long semesters.

B.A. in Honors Studies – Four-Year Academic Plan

Courses	Credit Hours
FRESHMAN YEAR	
Fall	
HIS 1043, 1053, or 2053 (core)	3
WRC 1013 (core)	3
Foreign Language (2023 level or above)	3
Mathematics core (MAT 1073 or higher)	3
Social & Behavioral Science core	3
Total semester hours	*15*
Spring	
CSH 1213 or IDS 2213 (Honors) (core & major)	3
HIS 1043, 1053, or 2053 (core)	3
WRC 1023 (core)	3
Free elective	3
Natural Sciences Level I core	3
Total semester hours	*15*

Courses	Credit Hours
SOPHOMORE YEAR	
Fall	
POL 1013 (core)	3
Concentration course	3
Free elective	3
Honors Community Service (HON 2201)	1
Literature core	3
Natural Sciences Level II core	3
Total semester hours	*16*
Spring	
POL 1133 or 1213 (core)	3
Concentration course	3
Free elective	3
Honors Community Service (HON 2201)	1
Science (Level II in the major)	3
World Society & Issues core or free elective	3
Total semester hours	*16*
JUNIOR YEAR	
Fall	
Concentration course	3
Concentration upper-division course	3
Honors Community Service (HON 2201)	1
Honors Seminar (Arts & Humanities)	3
Visual & Performing Arts core	3
Total semester hours	*13*
Spring	
ECO 2003, 2013, or 2023 (core)	3
HUM 3013, 3023, 3033, 3043, 3053 or 3063	3
Concentration upper-division course	3
Free elective	3
Honors Seminar (Social & Behavioral Science)	3
Total semester hours	*15*
SENIOR YEAR	
Fall	
AAS 4013, AMS 3343, ANT 3063, POL 3083, POL 3303 or SOC 3043	3
Concentration upper-division course	3
Concentration upper-division course	3
Honors Capstone Project (HON 4993)	3
Honors Seminar (Natural Science)	3
Total semester hours	*15*
Spring	
Concentration upper-division course	3
Free Elective	3
Free Elective	3
Free elective (upper-division)	3
Honors Capstone Project (HON 4993)	3
Total semester hours	*15*

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12. Course Descriptions

Accounting (ACC)

Department of Accounting, College of Business

2003 Foundations of Accounting
(3-0) 3 hours credit.
A study of accounting as the language of business. The focus is on the use of accounting information for decision making. This course is designed for nonbusiness majors and cannot be applied toward a degree in the College of Business.

2013 Principles of Accounting I [TCCN: ACCT 2301.]
(3-0) 3 hours credit.
An introduction to business external financial reporting designed to create an awareness of the accounting concepts and principles used in preparing the three basic financial statements: the income statement, balance sheet, and statement of cash flow. The course is designed for all business students, whether future users or preparers of accounting information.

2033 Principles of Accounting II [TCCN: ACCT 2302.]
(3-0) 3 hours credit. Prerequisite: ACC 2013.
An introduction to the determination, development, and uses of internal accounting information needed by business management to satisfy customers while controlling and containing costs. The course is designed for all business students, whether future users or preparers of accounting information.

3023 Intermediate Accounting I
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in both ACC 2013 and ACC 2033, successful completion of the Principles of Accounting Competency Exam (refer to Department of Accounting Web site), and declared major in the College of Business or department approval.
An in-depth study of promulgated accounting theory and concepts with an emphasis on corporate financial accounting and reporting, with a focus on U.S. GAAP, and exposure to International Financial Reporting Standards (IFRS).

3033 Intermediate Accounting II
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in ACC 3023 and declared accounting major or department approval.
A continuation of the in-depth study of promulgated accounting theory and concepts with an emphasis on corporate financial accounting and reporting, with a focus on U.S. GAAP, and exposure to International Financial Reporting Standards (IFRS).

3043 Federal Income Taxation
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in ACC 3023 and declared accounting major or department approval.
A conceptual introduction to the U.S. federal income tax system. Concepts include gross income, statutory deductions, property transactions, and computation of tax liabilities.

3113 Accounting Information Systems
(3-0) 3 hours credit. Prerequisites: ACC 2033 with a grade of "C–" or better, IS 3003, and declared accounting major or department approval.
A study of database management systems as they relate to the accounting function. Topics include database design and applications that focus on accounting, including the entity-relationship model, data modeling, object-oriented design, and database management.

3123 Cost Analysis
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in ACC 2033 and declared accounting major or department approval.
A study of internal accounting information generation with an emphasis on cost accounting tools to develop, implement, and evaluate strategy; cost accounting methods to determine product cost; and cost management concepts and procedures for making business decisions.

3433 Introduction to Digital Forensics for Accounting
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in both ACC 3023 and ACC 3113, and declared accounting major or department approval.
This course provides a multidisciplinary overview of digital forensics and high-technology crime involving computers for accounting. Students will gain experience understanding what types of digital evidence often exist in support of criminal and civil investigations as well as sensitive business matters, such as employment disputes, financial fraud, intellectual property theft, and other matters affecting accounting managers. This course examines evidence preservation as well as the legal and ethical issues surrounding the collection and analysis of digital evidence. (Same as IS 3433. Credit cannot be earned for both ACC 3433 and IS 3433.)

3503 Introduction to Information Assurance for Accounting
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in both ACC 3023 and ACC 3113, and declared accounting major or department approval.
This survey course presents common ways that hackers attack a network and how to defend against the attacks for accounting. It will also include related subjects such as how to protect data, encryption, physical security, and hiding data. The course is a "hands-on" class, and students will gain experience with readily available software packages. (Same as IS 3503. Credit cannot be earned for both ACC 3503 and IS 3503.)

4013 Principles of Auditing
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in both ACC 3033 and ACC 3113, and declared accounting major or department approval.
A study of the topic of auditing oriented toward primarily the financial auditing standpoint. The course focuses on the concepts and procedures of auditing applied to the audit of financial statements. Topics also covered include professional ethics, accounting and review services, and the public accounting profession.

4103 Business Process Management and Control
(3-0) 3 credit hours Prerequisites: ACC 3113 with a grade of "C–" or better and IS 3003.
A study of business processes that support an organization and how they are controlled. This course contributes to the student's understanding of how key business processes are managed, controlled and integrated in enterprise resource planning systems. SAP will be used to illustrate the concepts discussed in the class. (Same as IS 4103. Credit cannot be earned for both ACC 4103 and IS 4103.)

4153 Introduction to Business Entities Taxation
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in both ACC 3033 and ACC 3043, and declared accounting major or department approval.
An introduction to the fundamental concepts of the U.S. federal income tax system as it applies to entities other than individuals. Topics include the formation, income taxation, and liquidation of corporations and flow through entities. (Formerly titled "Federal Income Taxation II." Credit cannot be earned for both.)

4163 Contemporary Issues in Accounting Practice
(3-0) 3 hours credit. Prerequisite: A grade of "C–" or better in all preceding accounting courses; must be taken during the final semester in the undergraduate program.
A study of corporate valuation, financial statement analysis, and other advanced topics in accounting practice.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: MGT 3003, taken semester of graduation, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for the required forms.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933 Internship in Accounting
3 hours credit. Prerequisites: 12 semester credit hours of upper-division accounting courses including ACC 3033, an overall 3.0 grade point average, a 3.0 grade point average in upper-division accounting courses, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms.
Provides students with on-the-job training in public, industry, not-for-profit, or governmental accounting units. ACC 4933 may be completed only once for undergraduate degree credit. Credit cannot be earned for both ACC 4933 and ACC 4963.

4951-3 Special Studies in Accounting
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study of accounting topics not normally or not often available as part of the regular course offerings. ACC 4953 may be completed only once for degree credit.

4963 Accounting Practicum
(2-3) 3 hours credit. Prerequisites: ACC 3023 with a grade of "C–" or better, at least 15 semester credit hours of upper-division accounting courses, and permission of the instructor and Department Chair.
A lecture and laboratory course in which students use technology and procedures encountered in accounting practice. ACC 4963 may be completed only once for undergraduate degree credit. Credit cannot be earned for both ACC 4963 and ACC 4933. (Formerly titled "Experiential Laboratory in Accounting.")

4993 Honors Thesis
3 hours credit. Prerequisite: Enrollment limited to students applying for Honors in Accounting (see page 32).
Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval. No more than 3 semester credit hours can apply toward accounting major requirements.

Aerospace Studies (ASC)

Office of Undergraduate Studies

1031 The Foundation of the United States Air Force I
(1-1) 1 hour credit.
A survey course designed to introduce students to the United States Air Force and Air Force Reserve Officer Training Corps. Focuses on mission and organization of the Air Force, officership and professionalism, military customs and courtesies, Air Force opportunities, and an introduction to communication skills. Leadership Laboratory is mandatory for AFROTC cadets and complements the course by providing cadets with followership experiences.

1041 The Foundation of the United States Air Force II
(1-1) 1 hour credit.
A continuation of ASC 1031, students progress in acquiring skills and demonstrating their proficiency. Leadership Laboratory is mandatory for AFROTC cadets and complements the course by providing cadets with followership experiences.

2031 The Evolution of United States Air Force Air and Space Power I
(1-1) 1 hour credit.
Examines general aspects of air and space power through a historical perspective. Covers a time period from the first balloons and dirigibles to the space-age systems of the Global War on Terror. Historical examples are provided to extrapolate development of AF distinctive capabilities and missions to demonstrate the evolution of today's USAF air and space power. Examines several fundamental truths associated with war in the third dimension. Reviews importance of AF core values with use of operational examples and historical AF leaders. Stresses development of communication skills. Leadership Laboratory is mandatory for AFROTC cadets and complements the course by providing cadets with followership experiences.

2041 The Evolution of United States Air Force Air and Space Power II
(1-1) 1 hour credit.
A continuation of ASC 2031, students progress in acquiring skills and demonstrating their proficiency. Leadership Laboratory is mandatory for AFROTC cadets and complements the course by providing cadets with followership experiences.

3013 Air Force Leadership Studies I
(3-1) 3 hours credit.
A study of leadership, management fundamentals, professional knowledge, Air Force personnel and evaluation systems, leadership ethics, and communication skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied. Leadership Laboratory is mandatory for AFROTC cadets and complements the course by providing advanced leadership experiences in officer-type activities, giving students the opportunity to apply leadership and management principles.

3023 Air Force Leadership Studies II
(3-1) 3 hours credit.
A continuation of ASC 3013, students progress in acquiring skills and demonstrating their proficiency. Leadership Laboratory is mandatory for AFROTC cadets and complements the course by providing advanced leadership experiences in officer-type activities, giving students the opportunity to apply leadership and management principles.

4013 National Security Affairs/Preparation for Active Duty I
(3-1) 3 hours credit.
Examines the national security process, regional studies, advanced leadership ethics, and Air Force doctrine. Special topics of interest focus on the military as a profession, officership, military justice, civilian control of the military, preparation for active duty, and current issues affecting military professionalism. Within the structure, continued emphasis is given to refining communication skills. Leadership Laboratory is mandatory for AFROTC cadets and complements the course by providing advanced leadership experiences in officer-type activities, giving students the opportunity to apply leadership and management principles.

4023 National Security Affairs/Preparation for Active Duty II
(3-1) 3 hours credit.
Continuation of ASC 4013, students progress in acquiring skills and demonstrating their proficiency. Leadership Laboratory is mandatory for AFROTC cadets and complements the course by providing advanced leadership experiences in officer-type activities, giving students the opportunity to apply leadership and management principles.

African American Studies (AAS)

College of Education and Human Development

2013 Introduction to African American Studies
(3-0) 3 hours credit.
Offers an interdisciplinary introduction to major topics in African American Studies. Course materials will address basic contours of the black experience in the United States. Topics that may be investigated include historical, autobiographical, political, cultural, sociological, literacy, and/or popular responses to and representation of African Americans in the United States. (Same as AMS 2103. Credit cannot be earned for both AAS 2013 and AMS 2103.)

3013 African American Modes of Expression
(3-0) 3 hours credit.
This course examines modes of expression in the African American experience. The primary focus of the course can be language, art, music, or other forms of cultural expression. The substantive and disciplinary emphasis can vary from one semester to another. May be repeated for credit if the content, emphasis, and disciplinary cross listing change, and with the consent of advisor, program director, and Dean.

4013 Topics in African American Studies
(3-0) 3 hours credit.
This course analyzes historical and contemporary issues and phenomena associated with African Americans. It explores different methodological approaches by inquiring about these issues and phenomena, and presents varying arguments and ideological positions concerning these public-affairs matters. May be repeated for credit when topics vary. Two or more topics courses may be taken concurrently.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the program director, and Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree. A maximum of 3 semester credit hours may be applied to the minor.

4933 Internship in African American Studies
3 hours credit. Prerequisite: Consent of internship coordinator.
Supervised experience relevant to African American studies within selected community organizations. A maximum of 3 semester credit hours may be applied to the minor.

American Sign Language (ASL)

Department of Interdisciplinary Learning and Teaching, College of Education and Human Development

1013 American Sign Language: Basic I [TCCN: SGNL 1301.]
(3-0) 3 hours credit.
A study of American Sign Language, including basic concepts and sign lexicon. Grammatical features, including structure of American Sign Language, will be stressed. Each student will be expected to demonstrate to the instructor basic expressive and receptive ASL skills.

1023 American Sign Language: Basic II [TCCN: SGNL 1302.]
(3-0) 3 hours credit. Prerequisite: ASL 1013 or consent of instructor.
Continued study of American Sign Language including sign language colloquialisms used in conversational signing. Expands students' receptive and expressive ASL skills and provides a summary of information currently available dealing with ASL grammatical structure and its sociolinguistic and pragmatic usage.

2013 American Sign Language: Intermediate I [TCCN: SGNL 2301.]
(3-0) 3 hours credit. Prerequisites: ASL 1013 and ASL 1023, or consent of instructor.
This course is designed to help students improve their expressive, receptive, and general conversational ASL proficiency, particularly in morphology, semantics, syntax, and lexicon. Students will demonstrate their use of ASL for interactive purposes.

2023 American Sign Language: Intermediate II [TCCN: SGNL 2302.]
(3-0) 3 hours credit. Prerequisites: ASL 1013, ASL 1023, and ASL 2013, or consent of instructor.
This course is designed to further extend students' use of ASL skills for communicating with persons who are deaf or hard of hearing. Expands accuracy in using expressive and receptive skills. Students will encode and decode ASL forms related to a variety of topics and situations.

American Studies (AMS)

Department of History, College of Liberal and Fine Arts

2043 Approaches to American Culture
(3-0) 3 hours credit.
Introduces students to a variety of approaches to the study of American culture. Course materials will focus on key concepts such as race and ethnicity, transnationalism and border studies, and gender and sexuality. Students will be encouraged to integrate community-based resources such as local museums, archives, and research centers into course-required projects.

2103 Introduction to African American Studies
(3-0) 3 hours credit.
Offers an interdisciplinary introduction to major topics in African American Studies. Course materials will address basic contours of the black experience in the United States. Topics may include historical, autobiographical, political, cultural, sociological, literary, and/or popular responses to and representations of African Americans in the United States. (Same as AAS 2013. Credit cannot be earned for AMS 2103 and AAS 2013.)

3013 Early American Culture
(3-0) 3 hours credit.
Examines the influences that shaped American culture to the 20th century. Topics may include the impact of colonialism, the Enlightenment, the frontier, industrialism, ethnicity, race, religious reform, and other factors in the development of a distinctive society.

3023 Modern American Culture
(3-0) 3 hours credit.
Examines major trends in American culture during and after the industrial revolution, with special attention to the consequences of urbanization, suburbanization, industrialization, race relations, popular culture, technology, and secularization.

3123 Applications of American Studies
(3-0) 3 hours credit.
Applications of theories and methods of American Studies to particular areas of U.S. culture. Course addresses concepts of nationalism, citizenship, and nation building, inclusion and exclusion in American society, as well as how American cultural and group identities exist in relation to each other.

3243 Studies in Transnationalism
(3-0) 3 hours credit.
Exploration of borders, boundaries, crossings, and exchange in American Studies, with special reference to questions of national identity, material culture, transnationalism, and the impacts of globalization. May be repeated for credit when topics vary.

3343 Studies in Race and Ethnicity
(3-0) 3 hours credit.
The study of historical, social, cultural, and material influences on race and ethnicity. Course will use texts from literature, sociology, history, and other disciplines. May be repeated for credit when topics vary.

3443 Studies in Gender and Sexuality
(3-0) 3 hours credit.
Examination of topics such as masculine, feminine, gay, lesbian, bisexual, and transgendered definitions of gender and sexuality. Course will use texts from literature, sociology, history, and other disciplines. May be repeated for credit when topics vary.

4823 Topics in American Culture
(3-0) 3 hours credit.
An in-depth study of a selected issue or topic in American Studies. May be repeated for credit when topics vary.

4913 Independent Study
3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's AMS advisor, the Department Chair, and Dean of the College of Liberal and Fine Arts.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933,6 Internship in American Studies
3 or 6 hours credit. Prerequisite: Consent of AMS program coordinator.
Supervised experience relevant to American Studies within selected community organizations. A maximum of 6 semester credit hours may be earned through Internship in American Studies. Must be taken on a credit/no-credit basis. Only 3 semester credit hours can be applied to the major in American Studies.

4973 Advanced Seminar in American Studies
(3-0) 3 hours credit. Prerequisites: AMS 2043, AMS 3123, and one of the following: AMS 3243, AMS 3343, AMS 3443, or consent of instructor.
An in-depth study of a central theme, problem, or topic in American Studies. Focuses on research methods and preparation of senior portfolio required for the major degree.

4983 Senior Thesis
3 hours credit. Prerequisite: Approval of an AMS Faculty Advisor.
Supervised research and preparation of a senior thesis in the student's last semester.

4993 Honors Thesis
3 hours credit. Prerequisites: Enrollment limited to candidates for Honors in American Studies during their last two semesters; completion of honors examination and consent of the Honors College.
Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval.

Anthropology (ANT)

Department of Anthropology, College of Liberal and Fine Arts

1013 Introduction to Anthropology [TCCN: ANTH 2346.]
(3-0) 3 hours credit.
The study of human culture, past and present; its origin, development, and contemporary change; and the exploration of human physical and cultural differences using the paradigm of adaptation.

1103 Great Discoveries in Archaeology
(3-0) 3 hours credit.
This course surveys some of the greatest discoveries made by archaeologists in the last 300 years. Specific archaeological sites and finds illustrate the process of archaeological interpretation, provide insight into past cultures, and help to show how the past influences the present.

2033 Introduction to Physical Anthropology [TCCN: ANTH 2301.]
(3-0) 3 hours credit.
Examines basic issues, concepts, and orientations of physical anthropology, regarding human development and variation both past and present, as well as the relationship between human biology and culture.

2043 Introduction to Archaeology [TCCN: ANTH 2302.]
(3-0) 3 hours credit.
A problem-solving approach to classic and contemporary questions in archaeology. The nature of anthropological inquiry as reflected in the field is stressed.

2053 Introduction to Cultural Anthropology [TCCN: ANTH 2351.]
(3-0) 3 hours credit.
This course discusses culture and other basic anthropological concepts and their use in understanding variation in economy, social structure, and ideology. Ethnographic descriptions provide examples of cross-cultural variation. Attention is also given to processes governing culture continuity and change.

2063 Language, Thought, and Culture
(3-0) 3 hours credit.
This course surveys anthropological approaches to the study of language, emphasizing the relation between language and world view, and the social uses of speech. Instruction is given in the fundamentals of descriptive linguistics. The biological basis of language and patterns of historical development are also examined.

3103 Kinship and Social Organization
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2053 recommended.
Comparative analysis of kinship and social organization as they pertain to marriage, family sexuality and other social relationships. (Formerly titled "Social Organization.")

3133 Ritual and Symbol
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2053 recommended.
An examination of rituals—highly stereotyped, stylized, and repetitive acts usually taking place in carefully selected locations and marked by use of material items. Students will be offered a cross-cultural examination of ritual activity from various cultural regions. Attention is also given to the theoretical frames that contribute to a holistic understanding of ritual practice.

3153 Indians of the Great Plains
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2053 recommended.
An examination of the fundamental cultural transformation and flourishing of Native American societies of the Great Plains following the introduction of the horse. Attention is also given to the subsequent retrenchment under the imposition of Anglo-American dominance, and the recent emergence of new forms of cultural expression within tribal and urban areas.

3193 Drug Cultures
(3-0) 3 hours credit.
This course will examine different aspects of Western and non-Western drug cultures in historical and contemporary society. Topics may include traditional, medicinal and illicit drug use, food drugs, ethnomedicine, spirituality and altered states, indigenous property rights, as well as the drug trade, markets and globalization.

3203 Native North Americans
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2053 recommended.
Survey of Native North American cultures from ancient times to the present. Emphasis will be placed on cultural responses to colonialism and European/American intrusion as well as contemporary issues confronting native North Americans in the present day.

3223 Anthropology and the Environment
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2053 recommended.
Human adaptation to the environment and interaction with it, comparing simple and complex societies in various environmental contexts. (Formerly titled "Cultural Ecology.")

3233 Frauds, Myths, and Mysteries
(3-0) 3 hours credit.
This course will critically examine pseudoscience, cult archaeology, and creationism from a scientific perspective. The careful assessment of particular case studies will demonstrate how a strong adherence to professional archaeological methods can uncover facts about the past that are as interesting as myth.

3253 The Archeology of South America
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2043 recommended.
The origins and development of the native cultures of South America, and their relationships to the cultural areas of Central America and the Caribbean. Emphasis on the variety of cultural forms and cultural evolution. The roles of demography, subsistence systems, militarism, religion, and other factors in the rise of South American cultures may be discussed.

3263 Archaeology of North America
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2043 recommended.
Survey of prehistoric cultures in North America from earliest times to historic contact. May include discussion of Ice Age mammoth hunters, Eastern mound-building cultures, Southwestern pueblo cultures, and Plains bison hunters. Chronology, sites, settlement and subsistence patterns, and recent research issues may be considered.

3273 Civilizations of Mexico
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2043 recommended.
Examination of the development of the ancient civilizations of Mexico and Central America: Olmec, Teotihuacan, Toltec, Aztec, and Zapotec, among others. Insights will be drawn from archaeological data, art, hieroglyphic writing, ethnohistoric accounts, and Colonial Period documents. (Formerly titled "Ancient Civilizations of Mesoamerica.")

3293 Analytical Methods in Anthropology
(3-0) 3 hours credit. Prerequisites: Completion of Core Curriculum requirement in mathematics recommended; ANT 2043 or ANT 2053 recommended.
Qualitative and quantitative analysis and computer applications as used in anthropological research.

3303 Nature and Culture in Greater Amazonia
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2053 recommended.
This course examines the historical and contemporary situations of the indigenous peoples of lowland South America, focusing specifically on the Amazon Basin. Consideration will be given to classical ethnographic monographs as well as accounts of the political and ecological challenges that currently face the inhabitants of Greater Amazonia.

3333 Physical Anthropology of Human Populations
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2033 recommended.
Examines the biological variability of living populations; includes genetics, anatomy, demography, and change within a physical anthropology framework.

3343 The Contemporary Pacific
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2053 recommended.
This course examines the geography, prehistory, colonial contact and contemporary society in the Pacific Islands. Drawing on case studies from Hawaii to Papua New Guinea, emphasis is placed on ethnography and the contribution of the area to anthropological thought.

3363 Indians of Mesoamerica
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2053 recommended.
Survey of the indigenous peoples of Mexico and Central America, including Maya, Zapotec, Mixtec, and Nahua (Aztec) cultures, from before the Spanish conquest to the present. The course emphasizes interactions between native peoples and the Spanish colonial and modern national regimes and processes of culture change.

3383 Folklore and Folklife
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2053 recommended.
Examines vernacular arts, crafts, and customs and their function in the maintenance of group identity. National, regional, ethnic, and occupational traditions are investigated. Attention is given to texts such as legends, myths, and ballads, as well as folk performance, clothing, architecture, and foodways.

3403,6 Field Course in Archaeology
3 or 6 hours credit. Prerequisites: Upper-division standing, consent of instructor, and at least one previous anthropology or archaeology course.
Offers the opportunity to gain intensive training in archaeological field methods: excavation, site survey, mapping, sampling, and interpretation. Additional fees are required. May be repeated for credit with advisor's permission, but not more than 6 semester credit hours may be applied to a major in anthropology.

3413 The Fieldwork Experience
(3-0) 3 hours credit. Prerequisite: ANT 2053 or consent of instructor.
Drawing upon the field experiences of major figures in anthropology, the course explores the scientific and humanistic aspects of research in cultural anthropology. Ethnographic methods and techniques are discussed, with emphasis on participant observation and ethical considerations.

3503 Human Origins
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2033 recommended.
The fossil record of human emergence and comparative studies of human evolution. Evolution of social organization, technology, and language development to the end of the Ice Age.

3513 The Human Skeleton
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2033 recommended.
Students are given the opportunity to develop skills in the study and analysis of human osteological remains. Applications of skeletal analysis in a variety of fields are considered, including physical anthropology and archaeological demography.

3523 Medical Anthropology
(3-0) 3 hours credit. Prerequisite: ANT 1013, ANT 2033, or ANT 2053 recommended.
This course approaches the study of health and disease patterns in human populations through the combined perspectives of culture, biology, and ecology.

3543 Museum Studies in Anthropology
(3-0) 3 hours credit. Prerequisite: ANT 1013, ANT 2043, or ANT 2053 recommended.
By studying the nature and functioning of museums, past and present, this course will explore major controversies and debates about the politics of memory and visual display. Particular emphasis will be placed upon the role of anthropologists and archaeologists in museum contexts. Methodologically, the course will provide an overview of techniques used in exhibition planning and design as well as in collections management.

3603 Sex, Gender, and Culture
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2033 recommended.
Examination of the biological and cultural sources of differences between men and women.

3663 Hunters and Gatherers
(3-0) 3 hours credit. Prerequisite: ANT 1013, ANT 2043, or ANT 2053 recommended.
The study of lifeways of hunting and gathering peoples around the world. Emphasis is placed on archaeological approaches to past hunting and gathering societies. Cross-cultural analyses utilizing ethnographic and archaeological data within an ecological context are emphasized.

3713 Anthropology of Material Culture
(3-0) 3 hours credit. Prerequisite: ANT 2043 or ANT 2053 recommended.
This course surveys the role of material culture in human social systems of the past and present. Archaeological, historical, and ethnographic case studies are used to illustrate how the material world is variously woven into the fabric of culture. (Formerly titled "Material Culture Systems.")

3723 Ancient Civilizations
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2043 recommended.
Cross-cultural exploration of the development of ancient civilizations and their social, economic, and political institutions, using archaeological remains, ancient art, and ancient writing. The course compares ancient civilizations of Mesoamerica, South America, Africa, and Asia. (Formerly titled "Ancient Complex Society.")

3733 Political and Legal Anthropology
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2053 recommended.
Comparative political and legal systems; forms of authority, legitimacy, and power. Major trends in anthropological thought are explored with emphasis on the political uses of myth, symbol, and ritual. Law and judicial processes are examined in Western and non-Western societies.

3743 The Anthropology of Cyber Cultures
(3-0) 3 hours credit. Prerequisite: ANT 1013 recommended.
This course focuses on the cultural and historical dimensions of cyberspace. Consideration will be given to a variety of topics that may include virtual worlds and gaming, online communities, social networking, the political economy of information as well as cross-cultural theories of identity, location, and space as these apply to cyber cultures.

3803 Media, Power, and Public Culture
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2053 recommended.
Film and media images facilitate the production, consumption, and circulation of ideas and practices in the United States and cross-culturally. The course traces the history and meaning of various communication technologies and their impact on culture. It will examine print, film, television, new digital media and the Internet, asking how these are used to create and perpetuate dominant cultural forms as well as how these are appropriated and used by people on the margins as critique and resistance. In an increasingly media-dominated world—mass advertising, indigenous film as political resistance, politics as media campaigns, DVD productions by gangs and terrorist organizations—understanding the relationship between media and culture is a critical dimension of the professional knowledge of our future.

3823 Applied Anthropology
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2053 recommended.
Applied cultural anthropology directly addresses the needs and problems of communities and organizations throughout the world. Topics include the history of applied anthropology; a conceptual framework for understanding the different styles of applied research; methods of applied anthropology; domains of applied anthropology: international development, medicine, education, business, criminal justice, and the environment; career options and becoming a professional.

3833 Indians of Texas
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2053 recommended.
Ethnological survey of the Indian populations of Texas from the early historic period to the present. (Formerly ANT 4133. Credit cannot be earned for both ANT 3833 and ANT 4133.)

3843 Introduction to Primate Diversity
(3-0) 3 hours credit.
This course offers a broad survey of the social behavior and ecology of the living primates. It begins with a survey of primate taxonomy, drawing distinctions among prosimians, monkeys, and apes. The course concludes with consideration of what the study of nonhuman primates can tell us about human evolution.

3853 Modern Ape Behavior and Ecology
(3-0) 3 hours credit.
Modern apes show considerable diversity in their behavioral and morphological adaptations. This course focuses on the major theoretical approaches to understanding the biological variation within this primate group. The question of whether great apes exhibit culture is also discussed.

3863 The Evolution of Human Nature
(3-0) 3 hours credit.
A central concept in the evolution of human behavior is the idea that our brains, like our bodies, have been shaped by natural selection. The extent to which this factor influences the diverse behavior of modern humans is a topic of considerable debate. This course takes a critical look at different attempts to explain human behavior based on adaptive design.

3873 Food, Culture, and Society
(3-0) 3 hours credit.
This course explores the relationship between food and culture in diverse societies by examining food, food practices, and production, as well as the meanings associated with food. Topics include issues of identity, class, food habits, global food systems, and world hunger.

3883 Death and Dying
(3-0) 3 hours credit. Prerequisite: ANT 1013, ANT 2043, or ANT 2053 recommended.
Cross-cultural approaches to death, dying, and bereavement with a focus on either contemporary or prehistoric cultures depending on instructor's emphasis. When exploring contemporary cultures, attention will be given to the emotional, social and ethical issues of dying, and the social organization of death and dying. When exploring prehistoric groups, attention will be given to conceptualizing death through diverse funerary practices, body treatment of the deceased, and religious principles involved with death. In both cases, the course seeks to provide a comparative understanding of death and its wider social implications. May be repeated once with advisor's approval when topic varies.

3893 Primate Ecology
(3-0) 3 hours credit.
Nonhuman primates in their natural habitats, including biogeography, feeding and ranging behavior, structure and social organization of groups in relation to environment, and primates as members of communities.

3903 Introduction to Linguistics
(3-0) 3 hours credit.
Basic principles of analysis and description of the structure of language, including sound system, word order, and meaning. Also, overview of selected subfields of linguistics, such as historical linguistics, sociolinguistics, language acquisition, and bilingualism. (Same as ENG 3343 and LNG 3813. Credit cannot be earned for more than one of these courses.)

4013 Maya Civilization
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2043 recommended.
Examination of the development of Maya civilization in Mexico and Central America. Insights will be drawn from archaeological data, art, hieroglyphic writing, ethnohistoric accounts, and Colonial Period documents.

4023 Histories of Anthropology
(3-0) 3 hours credit. Prerequisite: ANT 2033 ANT 2043, ANT 2053, or ANT 2063 recommended.
This course examines the history of anthropology as a distinct field, including considerations of historical figures, institutions and relationships among subfields. Emphasis will be placed on changes in theoretical and methodological orientations as they emerge in specific historical contexts.

4113 Archaeology of Texas
(3-0) 3 hours credit. Prerequisite: ANT 2043, ANT 3263, or ANT 3663 recommended.
Detailed review of prehistoric and historic aboriginal cultures of Texas and adjacent areas; current trends in Texas archaeology; examination of artifacts; and field trips to local prehistoric sites.

4123 Archaeology of the American Southwest
(3-0) 3 hours credit. Prerequisite: ANT 2043 or ANT 3263 recommended.
Consideration of the prehistoric cultures in the American Southwest and northern Mexico from the earliest occupations to European contact. Paleo-Indian, Archaic, Mogollon, Anasazi, and Hohokam occupations are reviewed with a consideration of recent research directions and theory.

4233 Conservation of Primates in Global Perspective
(3-0) 3 hours credit. Prerequisite: ANT 2033 or ANT 3843 recommended.
Analysis of the conservation status of the world's nonhuman primates, and the specific threats to their survival. Includes examination of issues relating to the anthropology of conservation, such as human-nonhuman primate resource competition, anthropogenic habitat alteration related to land use and development, and efforts to achieve community-based conservation.

4243 Ethnographic Film
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2053 recommended.
Critique of major ethnographic films, concentrating on field methodology, production values, and the issue of representation.

4263 Anthropology of Globalization and Development
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2053 recommended.
Anthropological perspectives on the nature, causes, and consequences of social and cultural change, with an emphasis on how local cultures are shaped by and resist the process of globalization and development. (Formerly titled "Social and Cultural Change.")

4273 The Anthropology of Oil
(3-0) 3 hours credit. Prerequisite: ANT 1013 or ANT 2053 recommended.
This course explores the social, cultural, and political-economic significance of oil, the most important industrial commodity of the world. Case studies will be drawn from books, articles, and films that describe the importance of oil at the level of its production, distribution, and consumption in the United States and around the world.

4283 Culture in Theory and Practice
(3-0) 3 hours credit. Prerequisite: ANT 2033, ANT 2043, ANT 2053, or ANT 2063 recommended.
Examines philosophical approaches to culture and their applications within anthropology. Readings will include significant theoretical works from within anthropology and influential texts from related disciplines. Case studies will be used to illustrate these perspectives.

4333 Ecology and Evolution of Human Diseases
(3-0) 3 hours credit. Prerequisite: ANT 2033 recommended.
Ecological, evolutionary, and biocultural aspects of human disease. Topics include the ecology of infectious/parasitic disease pathogens and their human hosts, the evolution of human host-pathogen interactions, the impact of cultural and demographic change in human populations, and the effects of global environmental change on human disease patterns.

4363 Primate Evolutionary Biology
(3-0) 3 hours credit. Prerequisite: ANT 2033 or consent of Instructor.
This course evaluates the evolutionary history of the nonhuman primates. Examination will include information gained from fossil and genetic data as well as from modern phylogenetic methods.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933,6 Internship in Anthropology
3 or 6 hours credit. Prerequisite: Consent of internship coordinator.
Supervised experience relevant to anthropology within selected community organizations. A maximum of 6 semester credit hours may be earned through Internship in Anthropology. Must be taken on a credit/no-credit basis.

4953 Special Studies in Anthropology
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4983 Anthropology Honors Research
3 hours credit. Prerequisites: Enrollment limited to candidates for Department Honors during their last two semesters; approval of the Department faculty.
Supervised individual research and preparation of a major paper in support of Department Honors. May be repeated once with advisor's approval.

4993 Honors Thesis
3 hours credit. Prerequisites: Enrollment limited to candidates for University Honors in Anthropology during their last two semesters; and consent of the Honors College.
Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval.

Arabic (ARA)

Department of Modern Languages and Literatures, College of Liberal and Fine Arts

1014 Elementary Arabic I [TCCN: ARAB 1411.]
(3-2) 4 hours credit.
Fundamentals of Arabic offering the opportunity to develop speaking, listening, reading, and writing skills. Introduction to Arabic culture.

1024 Elementary Arabic II [TCCN: ARAB 1412.]
(3-2) 4 hours credit. Prerequisite: ARA 1014, an equivalent, or an appropriate placement test score.
Fundamentals of Arabic offering the opportunity to further develop speaking, listening, reading, and writing skills. Further exposure to Arabic culture.

2013 Intermediate Arabic I [TCCN: ARAB 2311.]
(3-1) 3 hours credit. Prerequisite: ARA 1024, an equivalent, or an appropriate placement test score.
Continued opportunity to develop listening, speaking, reading, and writing skills. Continued exposure to Arabic culture.

2023 Intermediate Arabic II [TCCN: ARAB 2312.]
(3-1) 3 hours credit. Prerequisite: ARA 2013, an equivalent, or an appropriate placement test score.
Continued opportunity to develop listening, speaking, reading, and writing skills. Continued exposure to Arabic culture.

Architecture (ARC)

Department of Architecture, College of Architecture

1413 Architecture and Culture [TCCN: ARCH 1305.]
(3-0) 3 hours credit.
Introduces architecture by exploring its sources within culture and the dynamic interrelationship between humans and the environment. Draws from diverse sources and cultures in the exploration of architectural order, including diverse global traditions, art, philosophy, literature, music, history, language, myth, ritual, oral and written traditions, and popular culture.

1513 Great Buildings and Cities of the World [TCCN: ARCH 1301.]
(3-0) 3 hours credit.
Introducing buildings and places that exemplify timeless architectural concepts and design strategies considered enduring contributions to the cultural heritage of the world. Examples from Africa, Asia, Europe, and the Americas are presented within the context of diverse cultures and express a variety of different aesthetic, political, and religious values. The course draws from diverse sources from high culture and vernacular sources span from antiquity to the present.

2116 Design III
(0-12) 6 hours credit. Prerequisite: Enrollment as an Architecture major.
Architectural design with an emphasis on development of the design process, and a focus on architectural elements, spatial organization, and structure. Includes introduction to programming, building-site relationships, precedent, human factors, and digital media.

2126 Design IV
(0-12) 6 hours credit. Prerequisites: ARC 2116 and enrollment as an Architecture major.
Architectural design with emphasis on development of design processes, architectural elements, and concepts, and a focus on urban fabric, spatial organization, structure, and detail. Includes introduction to life safety concerns, building codes, accessibility standards, and zoning regulations. Continued investigation of digital media.

2223 Building Technology II
(3-0) 3 hours credit. Prerequisite: Enrollment as an Architecture or a Construction Science and Management major or permission of instructor.
Introduction to architectural structures and the principles and systems of structural materials. Course considers the spatial, structural, sustainability, and aesthetic qualities possible in the articulation of structure through architectural design. (Formerly titled "Structures I.")

2413 History of Architecture: Prehistory through Medieval
[TCCN: ARCH 1301.]
(3-0) 3 hours credit.
Introduction to the history of architecture, urbanism, and material culture from prehistory to the 15th century. Explores the varied ways in which architecture reflects and shapes social, religious, and political concerns in the Western and non-Western world. Concurrent enrollment in ARC 2116 is recommended for Architecture majors and IDE 2116 for Interior Design majors.

2423 History of Architecture: Renaissance through Nineteenth Century [TCCN: ARCH 1302.]
(3-0) 3 hours credit.
Introduction to the history of architecture, urbanism, and material culture from the 15th to the 20th century. Explores the varied ways in which architecture reflects and shapes social, religious, and political concerns in the Western and non-Western world. Concurrent enrollment in ARC 2126 is recommended for Architecture majors and IDE 2126 for Interior Design majors.

2513 Introduction to Digital Design Media
(2-2) 3 hours credit. Prerequisite: Enrollment as an Architecture or an Interior Design major or permission of instructor.
Introduction to 2-dimensional image processing, as well as 3-dimensional and 4-dimensional digital design media. Addresses design skills, principles, techniques, procedures, and knowledge of how digital media impacts the design process, profession, and design culture.

3113 Advanced Design Visualization
(0-6) 3 hours credit. Prerequisite: Enrollment as an Architecture or an Interior Design major or permission of instructor.
Advanced exploration of graphic processes and techniques utilized in the design and construction of built environment for the representation, analysis, visualization, and/or presentation of the designed environment. (Formerly titled "Presentation Graphics.")

3203 Housing Planning: Design and Development
(3-0) 3 hours credit.
Survey of the evolution of housing design, planning and development that encompasses the design, location, organization, and financing of housing and community development programs and the capital and labor markets that impact such development at the local level.

3216 Architecture Studio I
(0-12) 6 hours credit. Prerequisites: ARC 2126, ARC 2223, ARC 2413, ARC 2423, completion of or concurrent enrollment in ARC 3233, and enrollment as an Architecture major.
Architectural design with emphasis on building technology and organization, materials and assemblies, and a focus on tectonics and structural principles. Includes detailed analysis of urban fabric, structure, and program. Space, enclosure, and structure are considered at multiple scales.

3226 Architecture Studio II
(0-12) 6 hours credit. Prerequisites: ARC 3216 and enrollment as an Architecture major.
Architectural design with a continued emphasis on building technology and organization, materials, and assemblies, and a focus on environmental conditions and the inter-relationship of building and environment. Architecture is studied as a coordinated response between building, environment and human factors. Site integration and tectonics are considered at multiple scales.

3233 Building Technology III
(3-0) 3 hours credit. Prerequisite: Enrollment as an Architecture or a Construction Science and Management major.
Continued introduction to architectural structures which considers the physical principles that govern classical statics and strength of materials. Graphical and mathematical design of structural systems. Consideration of the role of structural articulation and sustainability in the design of buildings. Completion of this course is required in order to take ARC 4246. (Formerly titled "Structures II.")

3343 Building Technology IV
(2-2) 3 hours credit. Prerequisite: Enrollment as an Architecture, a Construction Science and Management or an Interior Design major, or permission of instructor.
Environmentally responsive design of buildings and the natural and artificial systems that support them, including heating, ventilation and cooling, water and waste, and solid waste management and their installation. (Formerly titled "Environmental Systems I.")

3353 Building Technology V
(2-2) 3 hours credit. Prerequisite: Enrollment as an Architecture, a Construction Science and Management or an Interior Design major.
Light and sound as building form determinants and the natural and artificial systems that support them, including illumination, electrical design, and acoustics and their installation. (Formerly titled "Environmental Systems II.")

3433 Topics in Architecture and Thought
(3-0) 3 hours credit. Prerequisite: Enrollment as an Architecture or a Construction Science and Management major or permission of instructor.
Study of the relationship between the built environment and thought. Examines ideas and processes that give shape to built form. Readings are drawn from a multitude of sources including art, literature, philosophy, science, and architectural theories of different cultures and historical periods. Work includes a research and writing component. May be repeated for credit when topics vary. (Formerly ARC 1423.)

3533 History of Building Technology
(3-0) 3 hours credit.
Survey of the history of building technology to the present time. (Formerly ARC 2433. Credit cannot be earned for both ARC 3533 and ARC 2433.)

3613 History of Modern Architecture
(3-0) 3 hours credit. Prerequisites: WRC 1013 and WRC 1023.
Study of the social, aesthetic, theoretical, technical, cultural, and professional forces that form, shape, and communicate modern architecture. Completion of ARC 2413 and ARC 2423 is recommended for Architecture and Interior Design majors.

4113 Urban Project Development
(3-0) 3 hours credit.
Introduction to a range of physical planning topics including land use planning, growth management, infrastructure planning, and urban design. Planning mechanisms such as codes and urban design guidelines that help regulate development of the built environment will be emphasized. Planning at different scales including municipal, comprehensive plans, specific area plans, site plans, and state and regional plans.

4123 Introduction to Community and Regional Planning and Urban Design
(3-0) 3 hours credit.
Introduction to basic practices in community planning and urban design issues, including theoretical/historical bases; developing neighborhood plans/projects; indicators and evaluation of neighborhood sustainability; community patterns; institutional framework, site planning analysis; zoning ordinances; subdivision ordinances; community services, circulation; mixed-use, and community development programming. (Formerly titled "Community Planning and Urban Design.")

4143 Architecture Topics
(3-0) 3 hours credit. Prerequisite: ARC 2126 or consent of instructor.
A study of current trends and issues in architecture. May be repeated for credit when topics vary, but not more than 9 semester credit hours will apply to a bachelor's degree.

4153 Topics in International Architecture
(3-0) 3 hours credit. Prerequisite: ARC 2126 or consent of instructor.
An examination of current international trends and issues in architecture and urbanism. May be repeated once for credit when topics vary.

4163 Visual Communication for Urban and Regional Planning
(3-0) 3 hours credit.
Expressing planning data and geographic information in visual terms for land use planning projects. Application of related computer software.

4223 Topics in Design Computing
(2-2) 3 hours credit. Prerequisite: ARC 2513 or consent of instructor.
Theory-based seminar course exploring critical, spatial and philosophical issues relative to the impact of digital technologies within the field of architecture. Involves some usage of 2-D and 3-D digital media.

4233 Computer Projects in Design
(2-2) 3 hours credit. Prerequisite: ARC 2513 or consent of instructor.
Project-driven lecture/laboratory course exploring advanced issues associated with 3-D modeling, animation, photo-realistic visualization, and computer-aided manufacturing. Considers the role these processes play in architectural and interior design. (Same as IDE 4233. Credit cannot be earned for both ARC 4233 and IDE 4233.)

4246 Architecture Systems Studio
(0-12) 6 hours credit. Prerequisites: ARC 3226, ARC 3233, ARC 3343, ARC 3353, and enrollment as an Architecture major.
Architectural design with focus on integration of building elements, components, and systems. Includes the design of structural, environmental, electrical, mechanical, and enclosure systems. Includes modules which examine the specific requirements of technical documentation, accessibility, vertical circulation, and building codes.

4256 Architectural Topics Studio
(0-12) 6 hours credit. Prerequisites: ARC 3226 and enrollment as an Architecture major.
Research-based exploration and application of advanced design theory relative to topics in architecture and urban design. (Formerly titled "Architecture Research Studio.")

4333 Practicum
3 hours credit. Prerequisites: ARC 3226, IDE 3246 or enrollment as a major in Real Estate Finance and Development, and consent of instructor.
Offers students majoring in architecture, interior design, and real estate finance and development participation in a variety of design, development, and construction concerns. Students work under supervision 15 to 20 hours a week in an approved internship to gain knowledge of their respective professional fields.

4423 History and Theory of Urban Form
(3-0) 3 hours credit.
Concentrates on the origin of the contemporary city, its current condition, and emerging theories of urban design and planning.

4816 Study Abroad: Studio
(0-12) 6 hours credit. Prerequisite: ARC 3216 or permission of instructor.
An architecture or planning studio associated with a study abroad program.

4823 Study Abroad: History/Theory
(3-0) 3 hours credit. Prerequisite: Permission of instructor.
A lecture/seminar course associated with a study abroad program; involves field trips.

4833 Study Abroad: Observational Drawing
(0-6) 3 hours credit. Prerequisite: Permission of instructor.
A drawing course associated with a study abroad program; involves field trips.

4953,6 Special Studies in Architecture
(0-6, 0-12) 3 or 6 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or often available as part of the regular course offerings. Special studies may be repeated for credit when the topics vary, but not more than 3 semester credit hours for ARC 4953 or 12 hours for ARC 4956, regardless of discipline, will apply to a bachelor's degree.

Art (ART)

Department of Art and Art History, College of Liberal and Fine Arts

NOTE: Due to the instructional format of studio/laboratory classes, auditors will not be approved for ART courses.

1003 Two Dimensional Foundations [TCCN: ARTS 1311.]
(0-6) 3 hours credit. Prerequisite: Art or Art History majors only. A grade of "C–" or better must be earned in this course to satisfy the prerequisite for subsequent courses in the Art major.
Exploration of the visual structure and organization of two-dimensional surfaces using a variety of media, with an emphasis on the development of creative and critical skills. This course may not be applied to Core Curriculum requirements. (Formerly titled "Design: Two Dimensional.")

1013 Three Dimensional Foundations [TCCN: ARTS 1312.]
(0-6) 3 hours credit. Prerequisite: Art or Art History majors only. A grade of "C–" or better must be earned in this course to satisfy the prerequisite for subsequent courses in the Art major.
Exploration of the visual structure and organization of multidimensional forms in a variety of materials, with an emphasis on the development of creative and critical skills. This course may not be applied to Core Curriculum requirements. (Formerly titled "Design: Three Dimensional.")

1103 Introduction to Visual Arts [TCCN: ARTS 1301.]
(3-0) 3 hours credit.
A course utilizing images and text designed to offer the general university student an introductory understanding of the broad range of history, interpretations and approaches comprising and applied to the field of visual art. May be applied to the Visual and Performing Arts Core Curriculum requirement for non-art majors. This course is designed for non-art majors and cannot be used to fulfill any of the major requirements for the B.A. in Art, the B.A. in Art History and Criticism, or the B.F.A.

1143 Art for Non-Art Majors [TCCN: ARTS 1325.]
(0-6) 3 hours credit.
An introduction to the history, fundamental principles, materials, and methods of visual art. Individual course sections will be devoted to the study of a specific art discipline such as drawing, painting, photography, or printmaking. May be repeated for credit when topics vary. May be applied to the Visual and Performing Arts Core Curriculum requirement for non-art majors. May not be applied to the degree requirements for a major in art.

1213 Drawing I [TCCN: ARTS 1316.]
(0-6) 3 hours credit. Prerequisite: This course is restricted to Art and Art History majors. A grade of "C–" or better must be earned in this course to satisfy the prerequisite for subsequent courses in the Art major.
Introduction to fundamental principles, materials, and techniques using a variety of drawing media. Emphasizes drawing from observation as a means to develop perceptual and technical skills for visual expression. Includes perspective and other systems of spatial organization. This course may not be applied to Core Curriculum requirements.

1223 Drawing II [TCCN: ARTS 1317.]
(0-6) 3 hours credit. Prerequisites: ART 1213; Art or Art History majors only. A grade of "C–" or better must be earned in this course to satisfy the prerequisite for subsequent courses in the Art major.
Continued experience with fundamental principles, materials, and techniques emphasizing drawing from observation. Experiences in a variety of media provide opportunities for further development of perceptual and technical skills for visual expression. This course may not be applied to Core Curriculum requirements.

2113 Painting: Basic [TCCN: ARTS 2316.]
(0-6) 3 hours credit. Prerequisites: ART 1003 and ART 1223.
Instruction in basic painting concepts, skills, and materials with an emphasis on the use of oil paint and oil mediums.

2223 New Media: Basic
(0-6) 3 hours credit. Prerequisite: ART 1003.
This course emphasizes the exploration of new methods and means of art making with contemporary media, and builds upon traditional art processes and concepts. It is an introduction to the essentials of using digital tools, providing an opportunity to learn a broad range of skills and techniques such as the fundamentals of Adobe Photoshop® and Illustrator®, preparation for printing, digital still cameras, scanning, and CD burning. Basic digital concepts covered include the operating system, storage media, directory structure, bitmap vs. vector graphic, and file conversions.

2313 Photography: Basic [TCCN: ARTS 2356.]
(0-6) 3 hours credit. Prerequisite: ART 1003.
This introductory level course will offer instruction on camera controls, black & white and color image development in a digital darkroom, in-house printing, file management, documentation of 2-D and 3-D artwork, online publishing, and digital montage primarily through the use of Adobe software. Projects emphasize both aesthetic and conceptual development through the introduction of historic and contemporary photographic genres. Students must have access to a digital SLR camera. Previous computer experience is helpful, but not required. Transfer students who have not had experience with digital darkroom must enroll in this course before proceeding to Photography: Intermediate and Advanced Topics (ART 3513 and ART 4533). (Formerly ART 2513.)

2413 Printmaking: Basic [TCCN: ARTS 2333.]
(0-6) 3 hours credit. Prerequisites: ART 1003 and ART 1223.
Introduction to printmaking processes, concepts, and materials.

2613 Sculpture: Basic [TCCN: ARTS 2326.]
(0-6) 3 hours credit. Prerequisite: ART 1013.
Instruction in basic sculptural concepts and materials.

2713 Ceramics: Basic [TCCN: ARTS 2346.]
(0-6) 3 hours credit. Prerequisite: ART 1003.
Students will be given the opportunity to learn basic ceramic concepts and techniques including wheel throwing, slab building, coil construction, and glazing, to create vessel and sculptural forms. Emphasis is placed on technical execution and the use of the material for personal expression. Students will also participate in team loading, unloading, and firing kilns. Lectures/presentations provide a general introduction to historical and contemporary ceramic artists and influences.

3023 Color Theory and Practice
(0-6) 3 hours credit. Prerequisites: ART 1003, ART 1013, and ART 1223.
Exploration of color theories and the practical use of color in its many different aspects including additive, subtractive, and 3-dimensional color; color mixing; interactions of color and light; color symbolism; and creative applications in various art media. Course format consists of lectures, student presentations, and assigned studio projects.

3033 Contemporary Studio: Concepts and Practice
(0-6) 3 hours credit. Prerequisites: Satisfactory completion of 9 semester credit hours of any three 2000-level art courses, and 6 semester credit hours of AHC courses.
Interdisciplinary studio projects generated from lectures, readings and discussion, focusing on critical and cultural issues from the 1970s to the present. Projects are intended to encourage collaborative efforts and nontraditional solutions. Required of all B.F.A. degree candidates.

3113 Painting II
(0-6) 3 hours credit. Prerequisites: ART 1003, ART 1223, and ART 2113.
Continued study of the methods and materials of painting connecting color, form, and composition to image and idea development. This course emphasizes the use of oil paint and oil mediums. Transfer students who have not had experience with oil paint must enroll in this course before proceeding to Painting III. May be repeated once for credit with instructor permission.

3133 Painting III
(0-6) 3 hours credit. Prerequisite: ART 3113 or consent of instructor.
Structured advanced painting projects that present a variety of approaches to painting with an aim to furthering both competence and an individual viewpoint in relation to historical and contemporary issues. Although a variety of media may be used at the instructor's discretion, all students must have had previous experience using oil paint. Transfer students who have not had experience with oil paint must enroll in ART 3113. Sections focusing on a special topic such as abstraction or the figure will occasionally be offered. May be repeated for credit.

3223 Drawing: Figure
(0-6) 3 hours credit. Prerequisite: ART 1223.
Study of the human figure and its historical and contemporary implications for the artist, including anatomical and structural dynamics, gesture, narrative, and issues concerning the body as subject. May be repeated for credit.

3513 Photography: Intermediate
(0-6) 3 hours credit. Prerequisite: ART 2313.
Students will build on technical knowledge through introduction of 35mm and medium film formats as well as black & white techniques and laboratory procedures. Students will further conceptual exploration of photography as a fine art medium through projects that explore historic and contemporary genres. Students must have access to a 35mm analog (film) SLR camera. Transfer students who have not had experience with traditional darkroom must enroll in this course before proceeding to Photography: Advanced Topics. This course cannot be repeated for additional credit.

4033 Studio Art Problems
(0-6) 3 hours credit. Prerequisite: Satisfactory completion of any two 2000-level art courses.
An advanced exploration of visual art ideas and practices using various media, materials, and processes. Occasionally may be devoted to a specific topic of study. May be repeated for credit when topics vary.

4133 Painting IV
(0-6) 3 hours credit. Prerequisites: ART 3113 and ART 3133 or consent of instructor.
Concentration on the development of a personal direction with consideration of historical and contemporary issues in painting. May include mixed media, hybrid forms and experimental approaches. May be repeated for credit.

4233 Drawing III
(0-6) 3 hours credit. Prerequisite: ART 1223.
Structured drawing projects assigned with an emphasis on the interrelationship of conceptual and technical development and personal directions in relation to pertinent issues in art. Explores a range of media, materials, and forms, including both conventional and experimental approaches to drawing. May be repeated for credit. (Formerly titled "Drawing: Advanced.")

4313 New Media
(0-6) 3 hours credit. Prerequisite: ART 2223.
The focus of this course is on new media as an extension of fine arts practice. Depending on the term topic, there may be instruction in static and/or non-static electronic media, including various forms such as digital print, Web, video, animation, and sound. Students will be encouraged to use digital and other new media tools experimentally to create original electronically generated art that amplifies and extends image making beyond traditional techniques. ART 4313 may be repeated for credit. Specific UTSA Department of Art and Art History degree plans require students to take this course multiple times, up to 15 credit hours (including Internship and Independent Study where the work falls primarily in the discipline of New Media). Students are expected to enroll in varying sections of ART 4313 in order to expand their knowledge of diverse new media: New Media: Video; New Media: Sound; New Media: Animation; New Media: Web. Students will be required to demonstrate an advanced and expanded performance, which includes execution of artwork, progression in digital media literacy and writing ability, building on their accomplishments in prior sections of ART 4313. This process of developing a refined skill set is time consuming and individualized to each student, as are the benchmarks of material, process and conceptual success that characterize each student's work. Students taking ART 4313 for additional credit will be evaluated on an increased mastery of the skill sets defined above in the learning outcomes of this course. Increased mastery of skills will include but not be limited to:

- The exploration of an additional area of digital media not used in prior semesters.
- The experimentation with, and the refinement of, an additional process(es) not used in prior semesters.
- Improved personal standard of quality demonstrated by a refinement in the sophistication of conceptual, material and process success that characterize the student's work.
- A demonstrated improvement of the student's ability or skill to formulate and verbally articulate his or her developing artistic direction measured against performance in prior semesters as well as over the course of the semester.
- An increased and more specific understanding of the history of new media especially directed towards the interests and investigations of the student.

(Formerly titled "Multimedia Art.")

4433 Printmaking
(0-6) 3 hours credit. Prerequisite: ART 2413.
An emphasis on the development of a personal vision and individual approach to the use of the medium, including experimentation in multiple processes. ART 4433 may be repeated for credit. Specific UTSA Department of Art and Art History degree plans require students to take this course multiple times up to 15 credit hours (including Internship and Independent Study where the work falls primarily in the discipline of printmaking). Students enrolling in ART 4433 will be required to demonstrate an advanced and expanded performance building on their accomplishments in prior sections of ART 4433. This process of developing a refined skill set is time consuming and individualized to each student as are the benchmarks of material, process and conceptual success that characterize each student's work. Students taking ART 4433 for additional credit will be evaluated on an increased mastery of the skill sets defined above in the learning outcomes of this course. Increased mastery of skills will include but not be limited to:

- The exploration of an additional material(s) not used in prior semesters.
- The experimentation with, and the refinement of, an additional process(es) not used in prior semesters.
- Improved personal standard of quality demonstrated by a refinement in the sophistication of conceptual, material and process success that characterize the student's work.
- A demonstrated improvement of the student's ability or skill to formulate and verbally articulate his or her developing artistic direction measured against performance in prior semesters as well as over the course of the semester.
- An increased and more specific understanding of the history of printmaking especially directed towards the interests and investigations of the student.

4533 Photography: Advanced Topics

(0-6) 3 hours credit. Prerequisites: ART 2313 and ART 3513. Emphasis on the development of a personal voice through exploration of advanced photographic techniques, concepts as well as self-defined projects. Students will build knowledge and understanding of photography as a fine art medium. Topics may include: Non-Silver and Alternative Processes; Controlled Lighting; Advanced Black and White; Image-Based Performance, Intervention, and Installation; Advanced Color and Digital Darkroom; Primitive Technologies–Pinhole and Toy Cameras. Transfer students who have not had experience with both digital and traditional darkroom must enroll in ART 2313 and ART 3513 before proceeding to Photography: Advanced Topics. While each offered topic may be repeated once for credit, students who chose photography as their emphasis area should take a minimum of four of the offered topics. ART 4533 may be repeated for credit. Specific UTSA Department of Art and Art History degree plans require students to take this course multiple times up to 15 credit hours (including Internship and Independent Study where the work falls primarily in the discipline of Photography). Students enrolling in ART 4533 will be required to demonstrate an advanced and expanded performance building on their accomplishments in prior sections of ART 4533. This process of developing a refined skill set is time consuming and individualized to each student as are the benchmarks of material, process and conceptual success that characterize each student's work. Students taking ART 4533 for additional credit will be evaluated on an increased mastery of the skill sets defined above in the learning outcomes of this course. Increased mastery of skills will include but not be limited to:

- The exploration of an additional material(s) not used in prior semesters.
- The experimentation with, and the refinement of, an additional processes(s) not used in prior semesters.
- Improved personal standard of quality demonstrated by a refinement in the sophistication of conceptual, material and process success that characterize the student's work.
- A demonstrated improvement of the student's ability or skill to formulate and verbally articulate his or her developing artistic direction measured against performance in prior semesters as well as over the course of the semester.
- An increased and more specific understanding of the history of photography especially directed towards the interests and investigations of the student.

(Formerly titled "Photography.")

4673 Sculpture

(0-6) 3 hours credit. Prerequisites: ART 1003 and ART 2613. An emphasis on the development of a personal vision and individual approach to the use of the medium. ART 4673 may be repeated for credit. Specific UTSA Department of Art and Art History degree plans require students to take this course multiple times up to 15 credit hours (including Internship and Independent Study where the work falls primarily in the discipline of Sculpture). Students enrolling in ART 4673 will be required to demonstrate an advanced and expanded performance building on their accomplishments in prior sections of ART 4673. This process of developing a refined skill set is time consuming and individualized to each student as are the benchmarks of material, process and conceptual success that characterize each student's work. Students taking ART 4673 for additional credit will be evaluated on an increased mastery of the skill sets defined above in the learning outcomes of this course. Increased mastery of skills will include but not be limited to:

- The exploration of an additional material(s) not used in prior semesters.
- The experimentation with, and the refinement of, an additional processes(s) not used in prior semesters.
- Improved personal standard of quality demonstrated by a refinement in the sophistication of conceptual, material and process success that characterize the student's work.
- A demonstrated improvement of the student's ability or skill to formulate and verbally articulate his or her developing artistic direction measured against performance in prior semesters as well as over the course of the semester.
- An increased and more specific understanding of the history of sculpture especially directed towards the interests and investigations of the student.

4753 Ceramics

(0-6) 3 hours credit. Prerequisites: ART 1003, ART 1013, and ART 2713.

An exploration of advanced techniques and processes including large-scale ceramic sculpture, the use of armatures, and clay body and glaze development. Emphasis is placed on technical execution and the use of the material for personal expression. Readings, lectures, and presentations are designed to broaden the students' historical and contemporary reference. ART 4753 may be repeated for credit. Specific UTSA Department of Art and Art History degree plans require students to take this course multiple times up to 15 credit hours (including Internship and Independent Study where the work falls primarily in the discipline of Ceramics). Students enrolling in ART 4753 will be required to demonstrate an advanced and expanded performance building on their accomplishments in prior sections of ART 4753. This process of developing a refined skill set is time consuming and individualized to each student, as are the benchmarks of material, process and conceptual success that characterize each student's work. Students taking ART 4753 for additional credit will be evaluated on an increased mastery of the skill sets defined above in the learning outcomes of this course. Increased mastery of skills will include but not be limited to:

- The exploration of an additional material(s) not used in prior semesters.
- The experimentation with, and the refinement of, an additional processes(s) not used in prior semesters.
- Improved personal standard of quality demonstrated by a refinement in the sophistication of conceptual, material and process success that characterize the student's work.
- A demonstrated improvement of the student's ability or skill to formulate and verbally articulate his or her developing artistic direction measured against performance in prior semesters as well as over the course of the semester.
- An increased and more specific understanding of the history of ceramics especially directed towards the interests and investigations of the student.

4833 Internship in the Visual Arts
3 hours credit. Prerequisite: Permission in writing (departmental form available).
Students will participate in projects on an individual basis. The practical application of art methods and principles in such projects as providing special art programs or exhibition assistance to organizations and providing technical studio assistance for artists. Students must confer with instructor during the semester prior to enrolling in order to formulate the content of the internship. May be repeated for credit. (Formerly titled "Practicum in the Visual Arts.")

4913 Independent Study
3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent studio projects produced under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree. This course may be used only under extraordinary conditions when a self-directed student needs special instruction in an area of studio art not offered within normal course offerings.

4953 Special Studies in Art
(0-6) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4983 Senior Seminar and Exhibition
(0-6) 3 hours credit. Prerequisites: ART 3033, and must have completed application for graduation.
This course prepares the student in the professional concerns of aesthetics, art practices, and exhibition. The student will prepare work for a group exhibition in consultation with both the class instructor and a faculty advisor from his or her studio area of specialization.

Art History and Criticism (AHC)

Department of Art and Art History, College of Liberal and Fine Arts

1113 Survey of Art and Architecture from Prehistoric Times to 1350 [TCCN: ARTS 1303.]
(3-0) 3 hours credit.
A critical and historical study of art and architecture as it developed from Paleolithic times to 1350 in the various civilizations of Europe, the Near East, and the New World. Course will include selected readings from related fields. May be applied to the Visual and Performing Arts Core Curriculum requirements for art and non-art majors.

1123 Survey of Art and Architecture in Europe and the New World from 1350 to 1750 [TCCN: ARTS 1304.]
(3-0) 3 hours credit.
A critical and historical study of art and architecture as it developed from the Renaissance in Europe and the period of the Aztecs and Incas in the New World to 1750. Course will include selected readings from related fields. May be applied to the Visual and Performing Arts Core Curriculum requirement for art and non-art majors.

1133 Survey of Modern Art
(3-0) 3 hours credit.
A critical and historical study of modern art from 1750 to the present. Course will include selected readings from related fields. May be applied to the Visual and Performing Arts Core Curriculum requirement for art and non-art majors.

3113 Contemporary Art
(3-0) 3 hours credit. Prerequisite: 3 semester credit hours of lower-division art history.
History, theory, and criticism of the visual arts of the United States and Europe from 1960 to the present. (Formerly AHC 4113. Credit cannot be earned for both AHC 3113 and AHC 4113.)

3423 Arts of Ancient America
(3-0) 3 hours credit. Prerequisite: 3 semester credit hours of lower-division art history.
A critical and historical study of art and architecture in the Western Hemisphere. (Formerly titled "Pre-Columbian Art and Architecture of Mesoamerica.")

3523 Latin American Art
(3-0) 3 hours credit. Prerequisite: 3 semester credit hours of lower-division art history.
A critical and historical study of art from the independence period to the present.

4333 Topics in Art History and Criticism
(3-0) 3 hours credit. Prerequisite: 3 semester credit hours of lower-division art history passed with a grade of "C–" or better.
Focus on a specific period, medium, or theoretical and critical issue within the history and criticism of art. May be repeated for credit when topics vary.

4913 Independent Study
3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion and/or critical writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933 Art Gallery and Museum Internship
3 hours credit. Prerequisite: Permission in writing (departmental form available).
Supervised experience related to preparation and installation of exhibitions in gallery and museum settings. Students must confer with instructor during the semester prior to enrolling in order to formulate the content of the internship. May be repeated once for credit. Enrollment limited to juniors and seniors with declared major or minor in Art History and Criticism.

Astronomy (AST)

Department of Physics and Astronomy,
College of Sciences

1013 Introduction to Astronomy [TCCN: ASTR 1303 or PHYS 1303.]
(3-0) 3 hours credit. Prerequisite: MAT 1023 or MAT 1073.
A descriptive course including the development of astronomy, its methods, and the motions, laws, and evolution of the solar system. Topics include general properties and types of stars, unusual stellar objects such as quasars and black holes, galaxies, evolution, and cosmology. Occasional evening viewing sessions are held. May apply toward the Level II Core Curriculum requirement in science.

1031 Introduction to Astronomy Laboratory [TCCN: ASTR 1103 or PHYS 1103.]
(1-2) 1 hour credit. Prerequisite: Completion of or concurrent enrollment in AST 1013, or consent of instructor.
This course is an introduction to practical observational techniques, using the school's telescopes as well as student-built classical instruments and exercises in the use of the telescope and certain other astronomical instruments, including simple observations, measurements, and photography. Topics include in-class projects on spectroscopy, stellar positions, solar heating, planetary motions, solar and astrophotography, star clusters, galaxies, and cosmology.

1033 Exploration of the Solar System [TCCN: ASTR 1304 or PHYS 1304.]
(3-0) 3 hours credit. Prerequisite: MAT 1023 or MAT 1073.
A descriptive course of modern studies of the solar system, including a survey of the properties of the planets and smaller bodies (asteroids and comets) and current theories of the origin of planetary systems. Topics include results from the latest satellite, robotic, and human exploration of space, origin of life in the solar system, existence of other planetary systems, possibilities of space colonization, and the search for extraterrestrial life (techniques and possibilities of communication with other intelligences). May apply toward the Level II Core Curriculum requirement in science.

1043 Current Topics in Astronomy
(3-0) 3 hours credit. Prerequisite: MAT 1023 or MAT 1073.
Astronomy receives considerable attention from the media and the public in general. It allows us to ask fundamental questions about who we are, where we come from, and where we will end up as a world. This course will concentrate on the areas of astronomy that are currently most covered by the media—planet detection and interpretation, recent NASA spacecraft missions, supermassive black holes, gamma-ray bursters, dark matter and dark energy in the Universe, and other significant developments that arise during the semester. This course will cover each of these in depth, but will also concentrate on the reaction that the media has had on them. The media and public often have an uncanny ability to probe directly to the main reasons for why scientists study a particular problem. The student who completes this course will be expected to not only have a better scientific understanding of the current hot topics in astronomy, but also understand how the media can actually drive science in general.

1053 Extreme Astronomy
(3-0) 3 hours credit. Prerequisite: AST 1013 completed with a grade of "C–" or better.
Topics include supernovae, neutron stars and pulsars; black holes, X-ray astronomy, and gamma-ray bursts; extragalactic radio sources, active galactic nuclei, and quasars.

1073 Astrobiology: Search for Life in the Universe
(3-0) 3 hours credit. Prerequisite: MAT 1023 or MAT 1073.
The concept that life might exist elsewhere besides the Earth has intrigued humankind for centuries. Technology has now enabled this fundamental question to be pursued with substantial international scientific vigor. Within the Solar System, several Mars probes, as well probes to the moons of Jupiter (Europa) and Saturn (Titan), are being developed with specific emphasis on the development of in-situ instrumentation to detect the presence of life. Beyond the Solar System, the search for life signs has gained momentum with the rapid growth in the number of known exoplanets. While the detection of exoplanets is challenging conventional views of planet formation, it has also created opportunities for new observational methods to detect and characterize habitability and bio-signatures. The study of life on Earth has revealed surprising constraints on the limits of life with the discovery of extremophiles capable of surviving in near-freezing, near-boiling, nonaqueous, or high-radiation environments. This interdisciplinary course involves topics in astronomy, planet formation, and biology.

1113 Astronomy for Educators
(3-0) 3 hours credit. Prerequisite: MAT 1023 or MAT 1073.
This is a one-semester introductory survey course on modern astronomy, specially designed for education majors. During the semester, students will develop course materials for classroom instruction appropriate for K–12 education. Correcting common misconceptions in astronomy and current teaching strategies will be discussed to help students master the course material and become effective teachers.

3001 Undergraduate Astronomy Seminar
(1-0) 1 hour credit. Prerequisite: Completion of or concurrent enrollment in AST 3003 or consent of instructor.
Designed for physics and astronomy majors. Discussions about current astronomical research, with different topics emphasized each semester. May be repeated twice for credit when the topics vary. Offered on a credit/no-credit basis only.

3013 Fundamentals of Astronomy
(3-0) 3 hours credit. Prerequisites: PHY 1963 (or PHY 1923) and MAT 1224 (or MAT 1193 and STA 1403) completed with a grade of "C–" or better.
This is a one-semester introductory survey course on modern astronomy for science and engineering majors. Students need to be comfortable with solving problems and using math as a tool to help master the course material. Students concerned about their problem-solving and math skills should consider taking AST 1013 instead, which is intended for non-science majors. Among the topics covered are the celestial sphere, basic orbit theory, stellar parameters, binary stars and light curves, and basic introduction to stellar spectral classification. (Formerly AST 2063. Credit cannot be earned for both AST 3093 and AST 2063.)

3023 Introduction to Astrophysics
(3-0) 3 hours credit. Prerequisites: AST 3013 and PHY 2103 or consent of instructor.
Topics include an introduction to stellar structure and evolution, stellar atmospheres, collapsed stars, galactic structure, introduction to cosmology, etc. (Formerly AST 3003 and PHY 4003. Credit cannot be earned for more than one of the following: AST 3003, AST 3023 or PHY 4003.)

3033 Observational Techniques in Astronomy
(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in AST 3023 or consent of instructor.
Properties of stars and starlight; principles of radiation; interpretation of stellar spectra. Observational techniques such as photometry, spectroscopy, telescopes and detectors; variable stars; binary stars. In addition to classical visual observations, topics span the electromagnetic spectrum, including radio, infrared, X-ray, and gamma-ray measurements in astronomy.

3043 Astrochemistry
(3-0) 3 hours credit. Prerequisite: AST 3023 or consent of instructor.
An interdisciplinary course that explores astrochemistry: the study of molecules in space. Where are they? How did they get there? What roles do they play in controlling or influencing astrophysical processes? The chemistry of interstellar molecules is one of modern astronomy's best tools for probing the processes of star and planet formation. Organic molecules formed in space and delivered to Earth's primordial surface may have contributed to the origin of terrestrial life. Through a combination of observational spectroscopy and imaging, theoretical modeling and controlled laboratory studies, the secrets of the cosmic chemical cauldron are beginning to be unlocked. This course involves readings in astronomy, chemistry, and biology.

3103 Observational Astronomy Laboratory
(0-6) 3 hours credit. Prerequisite: Completion of, with a grade of "C–" or better, or concurrent enrollment in AST 3033 or consent of instructor.
An introduction to practical observational techniques in astronomy designed for physical science students. Topics include basic observational techniques and modern instrumentation in astronomy including astrophotography, photometry, and spectroscopy of solar system, stellar and deep-space objects. Under the supervision of the course instructor, the students will use the 0.4-m telescope and other instrumentation on the campus observatory.

3303 Introduction to Galactic and Extragalactic Astronomy
(3-0) 3 hours credit. Prerequisite: AST 3023 or consent of instructor.
Topics include the Milky Way Galaxy and its constituents and the Local Group, morphology and properties of galaxies, Dark Matter, galaxy clusters, structure and evolution of galaxies including interactions and mergers, active galactic nuclei, gravitational lensing, and quasars.

4203 Stellar Astrophysics
(3-0) 3 hours credit. Prerequisite: AST 3023 or consent of instructor.
Topics include properties and evolution of stars, stellar atmospheres, stellar spectra, nuclear reactions, stellar models, equations of state, radiative transfer, nucleosynthesis in stars, supernovae, and degenerate stars.

4303 Solar System Astrophysics
(3-0) 3 hours credit. Prerequisite: AST 3023 or consent of instructor.
Modern studies of the solar system, including properties of the planets and smaller bodies, and the origin of planetary systems. Topics include the solar system, its formation, structure, and evolution; orbital dynamics, surfaces, interiors, atmospheres, magnetospheres, and other properties of the sun, the planets and their satellites; comets and asteroids; origin of planetary systems; extra-solar systems. (Formerly titled "The Solar System.")

4953 Special Studies in Astronomy
(3-0) 3 hours credit. Prerequisites: AST 3023 and consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Bicultural-Bilingual Studies (BBL)

Department of Bicultural-Bilingual Studies, College of Education and Human Development

2003 Language, Culture, and Society
(3-0) 3 hours credit.
The interdisciplinary study of language in its cultural and social contexts, with emphasis on linguistically heterogeneous communities. Topics include language and ethnicity, language and gender, language and social class, language acquisition, and oral and written language.

2023 Latino Cultural Expressions
(3-0) 3 hours credit.
An introductory overview of Hispanic visual, performing, and folk arts from their origins in the Iberian peninsula, through the later blending of cultures and their parallelism during revolutionary periods, to contemporary Latino expressions in the United States. (Same as MAS 2023. Credit cannot be earned for both BBL 2023 and MAS 2023.)

2033 Cultures of the Southwest
(3-0) 3 hours credit.
A panoramic study of the concept of culture and the social dynamics of exchange among those ethnic groups that determine the multicultural milieu of the Southwest. Examination of cultural differences and similarities among all peoples of the region and the role of multiculturalism in politics, education, economics, religion, and everyday life.

2243 Bilingual Families, Communities, and Schools
(3-0) 3 hours credit.
Examination of the interrelationships among Latino bilingual families, communities, and schools as they relate to the achievement of children in the bilingual classroom. In addition, students will explore the role of ethnicity, gender, and class in the historical construction of schooling as it is today. Course offered in Spanish and English.

3013 Language Analysis and Bilingualism
(3-0) 3 hours credit.
Survey of concepts in descriptive and contrastive linguistics; analysis of language contact phenomena, including cross-linguistic transfer, language alternation, and bilingualism. Offered in Spanish and English.

3023 Mexican American Culture
(3-0) 3 hours credit.
A survey of Mexican American cultural distinctiveness in the areas of biculturalism, cultural production, and social organization. Topics may include family and kinship, folklore, health, language, music, and religion.

3033 Mexican Americans in the Southwest
(3-0) 3 hours credit.
Historical foundations of the United States–Mexico biculturalism in the Southwest. An examination of the historical forces that created and shaped the Mexican American people as a bicultural community. Attention is given to Mexican American contributions in arts, economics, literature, and politics. (Same as MAS 3033. Credit cannot be earned for both BBL 3033 and MAS 3033.)

3043 Social Psychological Considerations in Mexican American Communities
(3-0) 3 hours credit.
A cross-cultural and social psychological study of human development, interethnic communication, stereotyping, learning styles, or other topics relevant to the bicultural setting. (Same as MAS 3043. Credit cannot be earned for both BBL 3043 and MAS 3043.)

3053 Foundations of Bilingual Studies
(3-0) 3 hours credit.
Investigation of the philosophies and theories of schooling in bilingual societies, with focus on language policy and the sociological, psychological, and legal aspects involved. A minimum of six hours of field experience is required. (Formerly BBL 4023. Credit cannot be earned for both BBL 3053 and BBL 4023.)

3133 Language Development in Bilinguals
(3-0) 3 hours credit.
A study of bilingual language development in its social and cultural contexts. Emphasis on factors affecting successful bilingual language development in schools and communities.

3143 Children's Literature for Bilingual Learners
(3-0) 3 hours credit.
Designed to familiarize students with oral and written children's literature in bilingual programs. Focus is on bilingual students' affective, linguistic, and literacy needs through appropriate instruction with authentic literature. Emphasis on Mexican American cultural experiences as well as universal themes. Taught in Spanish and English. A minimum of 10 hours of field-based experience is required.

3403 Cultural and Linguistic Diversity in a Pluralistic Society
(3-0) 3 hours credit.
Examination of sociolinguistic and sociocultural principles central to culturally diverse settings, including the classroom. Topics include educational equity, segregated schooling, the achievement gap, hegemony, and social dominance theory. Various pedagogical practices will be explored to identify culturally inclusive responses. Fifteen hours of field experience are required.

4003 Spanish for Bilingual Instructional Delivery
(3-0) 3 hours credit.
Designed to improve the Spanish proficiencies of bilingual classroom teachers. Study of the grammar, writing conventions, and vocabulary for effective communication and instructional delivery in a formal bilingual classroom setting. Taught in Spanish.

4013 Advanced Spanish for Bilingual Teaching and Learning
(3-0) 3 hours credit. Prerequisite: BBL 4003 or departmental permission.
Advanced study of formal academic Spanish for future bilingual educators. Extensive practice in reading and creating authentic didactic materials, instructional delivery, and effective communication with Spanish-speaking parents and community members. Taught in Spanish.

4033 Assessment, Learning, and Motivation in Bicultural-Bilingual Classrooms
(3-0) 3 hours credit. Prerequisites: Admission to a Bilingual Generalist Teacher Certification Program; BBL 3053, RDG 3823, and successful completion of the ALPS (Assessment of Language Proficiency in Spanish) sequence. Must be taken concurrently with BBL 4063, BBL 4073, and BBL 4403 for Bilingual Generalist EC–6 Teacher Certification majors. Must be taken concurrently with BBL 4063 and BBL 4073 for Bilingual Generalist 4–8 Teacher Certification majors.
A survey of learning and motivation theory and examination of evaluation and assessment procedures in bicultural-bilingual settings, including formal and informal assessment of language proficiency and learning for instructional purposes. The appropriate use of standardized tests with language minority populations will be included. A minimum of 10 hours of directed field experience in elementary and/or middle school classrooms is required. Taught in Spanish and English.

4063 Bilingual Approaches to Content-Based Learning
(3-0) 3 hours credit. Prerequisites: Admission to a Bilingual Generalist Teacher Certification Program; BBL 3053, RDG 3823, and successful completion of the ALPS (Assessment of Language Proficiency in Spanish) sequence. Must be taken concurrently with BBL 4033, BBL 4073, and BBL 4403 for Bilingual Generalist EC–6 Teacher Certification majors. Must be taken concurrently with BBL 4033 and BBL 4073 for Bilingual Generalist 4–8 Teacher Certification majors.
An investigation of appropriate first language usage in bilingual classrooms, focusing on the different content areas, appropriate terminology for native language instruction, and the study of languages distribution strategies. Twenty-five hours of directed field experience in elementary and/or middle school classrooms are required. Taught in Spanish.

4073 Language Arts in a Bicultural-Bilingual Program
(3-0) 3 hours credit. Prerequisites: Admission to a Bilingual Generalist Teacher Certification Program; BBL 3053, RDG 3823, and successful completion of the ALPS (Assessment of Language Proficiency in Spanish) sequence. Must be taken concurrently with BBL 4033, BBL 4063, and BBL 4403 for Bilingual Generalist EC–6 Teacher Certification majors. Must be taken concurrently with BBL 4033 and BBL 4063 for Bilingual Generalist 4–8 Teacher Certification majors.
An examination of theories, instructional strategies, texts and materials for biliteracy development in the elementary bilingual classroom. Emphasis on the integrated use of listening, speaking, reading, and writing in content area teaching. Twenty-five hours of directed field experience in elementary and/or middle school classrooms are required. Taught in Spanish.

4353 Approaches to Teaching Science EC–6
(2-2) 3 hours credit. Prerequisites: Admission to the Teacher Certification Program; BBL 3053, IDS 2403, IDS 2413, IDS 3201, and IDS 3211.
A study of pedagogical approaches, materials, and resources designed to support children's meaningful exploration, discovery, and construction of basic concepts and skills in EC–Grade 6. Emphasis in the course will be on the interrelatedness of science in the daily lives of students, unifying concepts and processes common to all sciences, development of effective learning environments for science both inside and outside of the classroom, planning and implementation of inquiry-based science lessons, assessment of student learning, and the use of an integrated approach to teaching. Restricted course; advisor code required for registration. Field experiences required. (Same as C&I 4353. Credit cannot be earned for both BBL 4353 and C&I 4353.)

4403 Approaches to Teaching Mathematics EC–6
(2-2) 3 hours credit. Prerequisites: Admission to Bilingual Generalist EC–6 Teacher Certification Program; BBL 3053, RDG 3823, and successful completion of the ALPS (Assessment of Language Proficiency in Spanish) sequence. Must be taken concurrently with BBL 4033, BBL 4063, and BBL 4073 for Bilingual Generalist EC–6 Teacher Certification majors.
This course involves the study of instructional methods and materials that support diverse children's meaningful exploration, discovery, and development of basic concepts and skills in mathematics from EC–Grade 6. Emphasizing a constructivist approach to the teaching and learning of mathematics, this course also advances the use of technology to facilitate mathematics understanding. Attention will be given to understanding the interrelatedness of mathematics and other content areas, creating effective learning environments, planning and implementing lesson plans to meet the differentiated needs of a wide variety of learners, and assessing student learning in mathematics. Restricted course; advisor code required for registration. Field experiences required. (Same as C&I 4403. Credit cannot be earned for both BBL 4403 and C&I 4403.)

4913 Independent Study
3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, and the Department Chair in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4953 Special Studies in Bilingual and Bicultural Studies
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. To apply credit earned in BBL 4953 toward a minor, consent of the academic advisor in the COEHD Advising and Certification Center is required.

Biology (BIO)

Department of Biology, College of Sciences

NOTE: All prerequisites for Biology (BIO) courses must be completed with a grade of "C–" or better.

1033 Drugs and Society [TCCN: PHED 1346.]
(3-0) 3 hours credit.
An examination of licit and illicit drugs and their biosocial effects. Topics include pharmacology of alcohol, stimulants, hallucinogens, addiction, and abuse. May be applied toward the Core Curriculum requirement in World Society and Issues.

1053 Introductory Microbiology [TCCN: BIOL 2320.]
(3-0) 3 hours credit. Prerequisite: BIO 1233 or BIO 1404.
A general study of microorganisms, their characteristics, isolation, growth, and importance in nature, industry, public health, and human disease. (Formerly AHS 1053. Credit cannot be earned for both BIO 1053 and AHS 1053. BIO 1053 cannot substitute for BIO 3713.)

1061 Introductory Microbiology Laboratory [TCCN: BIOL 2120.]
(0-3) 1 hour credit. Prerequisites: BIO 1233 or BIO 1404, and completion of or concurrent enrollment in BIO 1053.
Course provides basic microbiology lab skills and procedures, with emphasis on the growth, identification, and control of microbes of concern to health-care professionals. Immunodeficient and pregnant students must contact the Coordinator, Microbiology Teaching Labs, for additional instructions prior to the class start date. (Formerly AHS 1061. Credit cannot be earned for both BIO 1061 and AHS 1061. BIO 1061 cannot substitute for BIO 3722.)

1122 Laboratory Investigations in Biology [TCCN: BIOL 1106.]
(0-6) 2 hours credit. Prerequisite: Completion of or concurrent enrollment in BIO 1233 or BIO 1404.
Introduction to the tools, techniques, and topics of modern experimental biology. (Formerly BIO 1212. Credit cannot be earned for both BIO 1122 and BIO 1212.)

1233 Contemporary Biology I [TCCN: BIOL 1308.]
(3-0) 3 hours credit.
This is the first course in a two-part introduction to the science of biology for non-majors. This course focuses on the chemical basis of life, principles of inheritance, principles of evolution and biodiversity. May be applied toward the Level I Core Curriculum requirement in science. May not be applied to a B.S. degree in Biology.

1243 Contemporary Biology II [TCCN: BIOL 1309.]
(3-0) 3 hours credit.
This is the second course in a two-part introduction to the science of biology for non-majors. This course focuses on evolution, animal and plant physiology, and ecology. May be applied toward the Level II Core Curriculum requirement in science. May not be applied to a B.S. degree in Biology.

1404 Biosciences I [TCCN: BIOL 1306.]
(4-0) 4 hours credit. Prerequisite: Completion of or concurrent enrollment in one of the following: STA 1053, MAT 1023, MAT 1033, MAT 1073, or higher.
This is the first course in a two-part introduction to the science of biology for students majoring in biology or interested in pre-health professions. Topics include biochemistry, cell biology, genetics and molecular biology. The course includes a mandatory one-hour recitation per week. May be applied toward the Level I Core Curriculum requirement in science. (Formerly BIO 1113 and BIO 1203. Credit cannot be earned for both BIO 1404 and BIO 1113 or BIO 1203.)

1413 Biosciences II [TCCN: BIOL 1307.]
(3-0) 3 hours credit. Prerequisite: BIO 1404.
This is the second course in a two-part introduction to the science of biology for students majoring in biology or interested in pre-health professions. Topics include evolutionary biology, biotic diversity, plant structure and function, and ecology. May be applied toward the Level II Core Curriculum requirement in science. (Formerly BIO 1143 and BIO 1223. Credit cannot be earned for both BIO 1413 and BIO 1143 or BIO 1223.)

1511 Biomedical Research as a Career
(1-0) 1 hour credit.
Intended for science majors of any discipline, this course is designed to introduce students to career options in the biosciences, particularly biomedical research. Students will explore the opportunities available in research and learn what they can do now to successfully launch a future career as a scientist.

1882 Introduction to Health Professions
(2-0) 2 hours credit.
This course is designed to provide an overview of careers in the health professions. Medical terminology, professional roles and concepts, career opportunities, and specialties within each profession will be discussed. (Formerly AHS 1883. Credit cannot be earned for both BIO 1882 and AHS 1883.)

2003 Biology of Human Reproduction
(3-0) 3 hours credit.
An in-depth look at human reproductive anatomy, physiology, and behavior. Topics to be considered include anatomy, sex differentiation, neuroendocrine physiology, conception and development, birth control, and sexually transmitted diseases. (Formerly BIO 1023. Credit cannot be earned for both BIO 2003 and BIO 1023.)

2043 Nutrition [TCCN: BIOL 1322.]
(3-0) 3 hours credit. Prerequisite: BIO 1233 or BIO 1404.
In-depth study of nutrient classes in foods: their ingestion, digestion, absorption and utilization by the human body. Clinical consequences of nutrient deficiency or excess, and Medical Nutrition Therapy to complement management of disease. (Formerly AHS 2043. Credit cannot be earned for both BIO 2043 and AHS 2043.)

2083 Human Anatomy [TCCN: BIOL 2301.]
(3-0) 3 hours credit. Prerequisite: BIO 1233 or BIO 1404.
Systemic anatomy of the human organism. Includes cell biology, histology, and gross anatomy of major organ systems. (Formerly AHS 2083. Credit cannot be earned for both BIO 2083 and AHS 2083.)

2091 Human Anatomy Laboratory [TCCN: BIOL 2101.]
(0-3) 1 hour credit. Prerequisites: BIO 1233 or BIO 1404, and completion of or concurrent enrollment in BIO 2083.
The study of human anatomical systems using dissection of representative organisms. (Formerly AHS 2091. Credit cannot be earned for both BIO 2091 and AHS 2091.)

2103 Human Physiology [TCCN: BIOL 2302.]
(3-0) 3 hours credit. Prerequisite: BIO 1233 or BIO 1404.
Human physiological processes will be examined at the chemical, cellular, tissue and organ system levels. (Formerly AHS 2103. Credit cannot be earned for both BIO 2103 and AHS 2103. BIO 2103 cannot substitute for BIO 3413.)

2111 Human Physiology Laboratory [TCCN: BIOL 2102.]
(0-3) 1 hour credit. Prerequisites: BIO 1233 or BIO 1404, and completion of or concurrent enrollment in BIO 2103.
Lab based investigations of system physiological processes with emphasis on humans. (Formerly AHS 2111. Credit cannot be earned for both BIO 2111 and AHS 2111. BIO 2111 cannot substitute for BIO 3422.)

2313 Genetics [TCCN: BIOL 2316.]
(3-0) 3 hours credit. Prerequisites: BIO 1413 and completion of or concurrent enrollment in CHE 1103 and one of the following: MAT 1193, MAT 1214, or STA 1053. Concurrent enrollment in BIO 2322 is recommended.
Principles governing transmission of hereditary factors in plants and animals, with emphasis on molecular, biochemical, and population genetics.

2322 Genetics Laboratory
(1-4) 2 hours credit. Prerequisites: BIO 1122 and BIO 1413, and completion of or concurrent enrollment in BIO 2313, CHE 1103, and one of the following: MAT 1193, MAT 1214, or STA 1053.
A practical introduction to genetic problem solving that focuses on experiments with model organisms using classic, biochemical and molecular biological techniques. This laboratory includes a lecture component.

3003 Introduction to Marine Ecology
(3-0) 3 hours credit. Prerequisites: BIO 1122 and BIO 1413.
An introduction to the physio-chemical factors that affect the biology and distribution of marine organisms.

3013 Introduction to Clinical Medicine and Pathology
(3-0) 3 hours credit. Prerequisite: BIO 1404.
Introduction to concepts of human disease, diagnosis, and underlying pathology. (Formerly titled "Introductory Pathology.")

3063 Invertebrate Biology
(3-0) 3 hours credit. Prerequisites: BIO 1122 and BIO 1413.
A comprehensive study of the invertebrates with emphasis on their diversity, morphology, ecology, and evolution.

3123 Comparative Vertebrate Anatomy
(3-0) 3 hours credit. Prerequisite: BIO 1413. Concurrent enrollment in BIO 3132 is recommended.
A comparative analysis of developmental and adult anatomy of vertebrates (including human). Emphasis is placed on phylogenetic relationships between form, function and evolution. (Formerly BIO 2123. Credit cannot be earned for both BIO 2123 and BIO 3123.)

3132 Comparative Vertebrate Anatomy Laboratory
(0-6) 2 hours credit. Prerequisites: BIO 1413 and completion of or concurrent enrollment in BIO 3123.
An introduction to the vertebrates. Five representative vertebrate dissections with emphasis on mammalian anatomy in comparison with other forms. The ethology and life cycles, significance in evolution, comparative morphology and taxonomy of the vertebrates are studied in the laboratory and zoological gardens. Local field trips. (Formerly BIO 2132. Credit cannot be earned for both BIO 2132 and BIO 3132.)

3153 Physiology of Human Systems
(3-0) 3 hours credit. Prerequisites: BIO 1122 and BIO 1404.
Comprehensive systemic study of the physiological functions of the adult human organism, including an introduction to the underlying etiologies and clinical indicators of molecular, cellular, and tissue bases for common organ system diseases in humans. Clinical applications pertain to integrated human systems physiology in health and disease and the utility of clinical indicators and research for understanding evidence-based medicine. (Formerly AHS 3463. Credit cannot be earned for both BIO 3153 and AHS 3463. BIO 3153 cannot substitute for BIO 3413.)

3163 Histology and Cytology
(3-0) 3 hours credit. Prerequisite: BIO 2313. Concurrent enrollment in BIO 3172 is recommended.
The cytological and histological aspects of cellular organization.

3172 Histology and Cytology Laboratory
(0-6) 2 hours credit. Prerequisites: BIO 2313 and completion of or concurrent enrollment in BIO 3163.
Microscopic study of tissues and organs. Basic techniques to prepare tissues will be studied.

3213 Animal Behavior
(3-0) 3 hours credit. Prerequisite: BIO 1413 or consent of instructor.
A detailed study of animal behaviors and their biological determinants.

3263 The Woody Plants
(2-3) 3 hours credit. Prerequisite: Junior or senior status: a minimum of 60 semester credit hours.
A study of the woody plants emphasizing the characteristics of family, genus, and species. Includes identification of the common woody plants. Leaf, stem, and flower morphology, anatomy, and collecting techniques. Lecture, laboratory, and fieldwork will be included as part of the course.

3273 Biology of Flowering Plants
(2-3) 3 hours credit. Prerequisite: Junior or senior status: a minimum of 60 semester credit hours.
A study of the wildflowers of Texas emphasizing identification of the more common wildflowers, as well as family characteristics, flower anatomy, plant morphology, and plant-collecting techniques will be included. Lecture, laboratory, and fieldwork will be included as part of the course.

3283 Principles of Ecology
(3-0) 3 hours credit. Prerequisite: BIO 1413. Concurrent enrollment in BIO 3292 is recommended for biology majors.
A study of the interaction of organisms with their environment, with focus on ecological principles, adaptations of organisms, environmental pollution, and principles of conservation.

3292 Principles of Ecology Laboratory
(0-6) 2 hours credit. Prerequisites: BIO 1413 and completion of or concurrent enrollment in BIO 3283.
A field-oriented course emphasizing modern ecological techniques, including examinations of plant and animal populations and measurement of selected chemical and physical parameters.

3323 Evolution
(3-0) 3 hours credit. Prerequisite: BIO 2313.
A discussion of theories and possible mechanisms for evolutionary changes at various levels of organization.

3333 Plants and Society
(3-0) 3 hours credit. Prerequisite: BIO 2313.
The importance of plants and plant-derived products to human health and well being through the provision of food, pharmaceuticals, and other important natural products. (Formerly BIO 2343. Credit cannot be earned for both BIO 3333 and BIO 2343.)

3343 Plant Cell Biology
(3-0) 3 hours credit. Prerequisite: BIO 2313.
A comprehensive study of the molecular structures and functions of plant cells and their integration into the whole plant system. (Formerly titled "Plant Sciences.")

3413 Advanced Physiology
(3-0) 3 hours credit. Prerequisites: BIO 2313, MAT 1193, and STA 1403; PHY 1603 or PHY 1943 is recommended. Concurrent enrollment in BIO 3422 is also recommended.
This course is designed to develop the skills and competencies needed by students to understand the dynamic physiological processes underlying the maintenance of homeostatic balance in animals. Topics to be covered include endocrine, neural, muscular, cardiopulmonary and renal physiology. (BIO 2103 or BIO 3153 cannot substitute for BIO 3413.)

3422 Advanced Physiology Laboratory
(0-6) 2 hours credit. Prerequisite: Completion of or concurrent enrollment in BIO 3413.
Basic understanding of the physiological processes in living systems employing methods and instruments of biological research. (BIO 2111 cannot substitute for BIO 3422.)

3433 Neurobiology
(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in BIO 3413. Concurrent enrollment in BIO 3442 is recommended.
Anatomy and physiology of nervous systems; the mechanisms of neuronal functions.

3442 Neurobiology Laboratory
(0-6) 2 hours credit. Prerequisite: Completion of or concurrent enrollment in BIO 3433.
A laboratory course emphasizing principles presented in BIO 3433.

3513 Biochemistry
(3-0) 3 hours credit. Prerequisites: CHE 2603 and CHE 2612; BIO 2313 is recommended. Concurrent enrollment in BIO 3522 is recommended.
Introduction to biochemistry: amino acids, protein structure, enzymes, lipids, metabolism, nucleic acid structure, bioenergetics, and carbohydrates. (Credit cannot be earned for both BIO 3513 and CHE 4303.)

3522 Biochemistry Laboratory
(1-4) 2 hours credit. Prerequisites: CHE 2603 and CHE 2612, and completion of or concurrent enrollment in BIO 3513.
Basic biochemical laboratory techniques: Protein assay, centrifugation, protein purification, chromatography, electrophoresis, western blotting, and enzyme kinetics. This laboratory includes a lecture component.

3613 The Biology of Aging
(3-0) 3 hours credit. Prerequisite: BIO 2313.
The biological principles of human life and health; changes that occur with aging and their implications for the lives of students and their families.

3623 Neuropsychopharmacology
(3-0) 3 hours credit. Prerequisites: BIO 1122 and BIO 1413; BIO 3433 is recommended.
A study of the pharmacology of drugs that affect the function of the central nervous system. Topics include drug-receptor interactions, drugs of abuse, and drugs used to treat mental illness.

3663 Human Embryology
(3-0) 3 hours credit. Prerequisite: BIO 2313.
Development of the human embryo from fertilization to the birth of the fetus. The origin of various tissues and organs will be followed during development. Environmental and genetic factors that can alter development will be discussed.

3713 Microbiology
(3-0) 3 hours credit. Prerequisites: BIO 1122 and BIO 1413. Concurrent enrollment in BIO 2313 and BIO 3722 is recommended.
A comprehensive study of microorganisms, including their composition, morphology, growth, metabolism, classification, ecology, and significance in disease. (BIO 1053 cannot substitute for BIO 3713.)

3722 Microbiology Laboratory
(0-6) 2 hours credit. Prerequisites: BIO 1122 and BIO 1413, and completion of or concurrent enrollment in BIO 3713.
Basic microbiology techniques with emphasis on microscopy; cell staining and characterization; species isolation techniques; bacterial cultivation, nutrition, and physical requirements; and the physical and chemical control of microbes. Immunodeficient and pregnant students must contact the Coordinator, Microbiology Teaching Labs, for additional instructions prior to the class start date. (BIO 1061 cannot substitute for BIO 3722.)

3743 Bacteriology
(3-0) 3 hours credit. Prerequisite: BIO 3713; BIO 3722 is recommended.
A study of the phylogeny of prokaryotes; structure and function of prokaryotic cells; ecology and physiological diversity of prokaryotes; growth and control of microorganisms; genetics of bacteria and bacteriophages; bacteria as agents of disease; antibacterials and other chemotherapeutics; human applications of microbiology, microbial genomics and principles of microbial biotechnology.

3813 Cell Biology
(3-0) 3 hours credit. Prerequisite: BIO 2313; BIO 3513 is recommended. Concurrent enrollment in BIO 3822 is recommended.
A study of cellular molecules and metabolic processes; synthesis and regulation of macromolecules; differential gene expression; membranes and organelles; cytoskeleton; cell cycle and growth of normal and neoplastic cells.

3822 Cell Biology Laboratory
(1-4) 2 hours credit. Prerequisites: BIO 2313 and BIO 2322, and completion of or concurrent enrollment in BIO 3813.
A study of the microscopic, biochemical and molecular approaches used to investigate cellular structure and function, including the principles involved in the techniques, their practical application, and analysis of the data generated. This laboratory includes a lecture component.

3913 Molecular Biology
(3-0) 3 hours credit. Prerequisite: BIO 2313.
A study of nucleotides, DNA, replication, recombination, RNA, transcription, genetic code, translation, genomes, and chromosomes.

3933 Principles of Cancer Biology
(3-0) hours credit. Prerequisite: BIO 1413; BIO 3813 is recommended.
A study of the scientific evidence underlying principle concepts of cancer initiation, progression, and innovative treatments.

4033 Conservation Biology
(3-0) 3 hours credit. Prerequisite: BIO 3283.
The class topics will include studying the nature of the biosphere, threats to its integrity, and ecologically sound responses to these threats. Also included will be the origin and preservation of biotic diversity, how the rich variety of plant and animal life around us arose, how it has been maintained by natural processes, and how we can prevent its destruction.

4043 Desert Biology
(2-3) 3 hours credit. Prerequisite: Junior or senior status: a minimum of 60 semester credit hours, or consent of instructor.
A study of the deserts of the world with an emphasis on U.S. deserts. Adaptations of plants and animals and their responses to desert conditions, as well as examinations of desert climatic patterns, geology, and natural history. Lecture, laboratory, and fieldwork will be included.

4053 Wildlife Biology
(3-0) 3 hours credit. Prerequisite: BIO 3283.
An introduction to wildlife biology and management including ecological principles dealing with ecosystems, natural communities, and populations. The importance of animal behavior, the availability of food, cover, wildlife diseases, predators, hunting, and trapping will be included. Field studies will allow students to observe and apply classroom topics.

4063 Ornithology
(2-3) 3 hours credit. Prerequisites: BIO 1122 and BIO 1404.
A course covering various aspects of the biology of birds, including anatomy, physiology, systematics, evolution, behavior, ecology, and biogeography. Field trips will be included.

4073 Law, Ethics, and the Life Sciences
(3-0) 3 hours credit. Prerequisite: Junior or senior status: a minimum of 60 semester credit hours.
Current societal issues which require an understanding of biology (e.g., stem cell research, assisted suicide, abortion, reproductive options, global warming, Intelligent Design, etc.) are considered.

4083 Entomology
(3-0) 3 hours credit. Prerequisite: BIO 2313; BIO 3513 is recommended.
Insect taxonomy and systematics, evolution, anatomy, physiology, reproduction, development and ecology.

4143 Developmental Biology
(3-0) 3 hours credit. Prerequisite: BIO 2313. Concurrent enrollment in BIO 4152 is recommended.
Overview of developmental biology focusing on the origins of classical concepts as well as modern molecular approaches. Emphasis will be placed on the mechanisms underlying developmental processes using both invertebrate and vertebrate examples. Subjects include axis formation, induction, morphogenesis, embryonic pattern formation, cell differentiation, and organogenesis. (Formerly BIO 3143. Credit cannot be earned for both BIO 4143 and BIO 3143.)

4152 Developmental Biology Laboratory
(0-6) 2 hours credit. Prerequisites: BIO 2313 and BIO 2322, and completion of or concurrent enrollment in BIO 4143.
Laboratory applications of concepts presented in BIO 4143. (Formerly BIO 3152. Credit cannot be earned for both BIO 4152 and BIO 3152.)

4233 Field Biology
(3-0) 3 hours credit. Prerequisite: Junior or senior status: a minimum of 60 semester credit hours, or consent of instructor. Concurrent enrollment in BIO 4241 is recommended.
A study of the natural history of plants and animals in their native environment. Techniques for the identification of birds, mammals, reptiles, amphibians, insects, and the dominant flowering plants will be discussed.

4241 Field Biology Laboratory
(0-3) 1 hour credit. Prerequisite: Junior or senior status: a minimum of 60 semester credit hours, or consent of instructor. Concurrent enrollment in BIO 4233 is recommended.
A field-oriented course offering the opportunity for practical experience observing, collecting, and identifying Texas plants and animals.

4362 Marine Ecology Field Trip
(2-0) 2 hours credit. Prerequisites: BIO 3003, BIO 3063, and BIO 3413.
Field and laboratory methods employed in marine biology. Samples collected from weekend field trip to the University of Texas Marine Station at Port Aransas will be identified and analyzed for various biologic and physico-chemical parameters.

4453 Endocrinology
(3-0) 3 hours credit. Prerequisite: BIO 1413.
Molecular, cellular and physiological effects of hormones in health and disease. Topics include molecular mechanisms of hormone action in reproductive physiology, growth and development as well as defects in hormonal regulation underlying clinically important syndromes (e.g., diabetes, hypertension, osteoporosis and cancer).

4473 Advanced Clinical Medicine and Pathology
(3-0) 3 hours credit. Prerequisite: BIO 3013.
Advanced concepts of human disease, diagnosis, and underlying pathology.

4483 Medical Mycology
(3-0) 3 hours credit. Prerequisites: BIO 3713 and BIO 3722.
Comprehensive study of causative agents, pathogenesis, and treatment of human fungal diseases.

4493 Molecular Mycology
(3-0) 3 hours credit. Prerequisites: BIO 2313 and BIO 2322; BIO 3713 is recommended.
An examination of the basic concepts of fungal biology at the molecular level and the insights into fundamental biological processes derived from their study.

4523 Intermediary Metabolism
(3-0) 3 hours credit. Prerequisites: BIO 3513 and BIO 3522.
A detailed consideration of metabolic pathways and energy metabolism and their regulation.

4583 The Computational Brain
(3-0) 3 hours credit. Prerequisite: BIO 3433.
Principles of cellular neurophysiology and neuroanatomy are used to explore the computational operations performed by neurons and networks of neurons.

4643 Medicinal Plants
(3-0) 3 hours credit. Prerequisite: BIO 2313; BIO 3513 is recommended.
Ethnobotanical, biochemical and pharmacological aspects of some of our most important plant-derived drugs.

4723 Virology
(3-0) 3 hours credit. Prerequisite: BIO 2313; BIO 3513 is recommended.
Introduction to the molecular, genetic, and biological properties of viruses. Course will cover the basic concepts of virus structure, replication, virus/host interactions, pathogenesis, and evolution.

4743 Immunology
(3-0) 3 hours credit. Prerequisites: BIO 2313 and BIO 3713. Concurrent enrollment in BIO 4752 is recommended.
A study of the properties of antigens and antibodies and current concepts of humoral and cell-mediated immunity and the cells involved.

4752 Immunology Laboratory
(0-6) 2 hours credit. Prerequisites: BIO 3713 and BIO 3722, and completion of or concurrent enrollment in BIO 4743.
Laboratory applications of principles presented in BIO 4743.

4763 Parasitology
(3-0) 3 hours credit. Prerequisites: BIO 1122 and BIO 1413.
A study of the animal parasites of medical and veterinary importance, with emphasis on their epidemiology, life cycles, pathology, and control.

4813 Brain and Behavior
(3-0) 3 hours credit. Prerequisites: BIO 1122 and BIO 1413.
Basic physiological functions of the brain and how they relate to behavior.

4823 Cognitive Neuroscience
(3-0) 3 hours credit. Prerequisite: Junior or senior status: a minimum of 60 semester credit hours; BIO 3433 (or PSY 3103) is recommended.
The biological foundations of mental phenomena, including perception, attention, learning, memory, language, motor control, and executive function, as well as functional specialization, development and plasticity, through various methodologies.

4911-3 Independent Study
1 to 3 hours credit. (Hours arranged.) Prerequisite: Permission in writing (form available) from the instructor, an undergraduate advisor in the College of Sciences Undergraduate Advising Center, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but no more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Only 6 semester credit hours of BIO 4911-3, BIO 4923 and BIO 4991-3, in any combination, can be taken as BIO electives. Additional research hours of these courses may be taken as free electives, for a maximum of 12 research hours being applied to the bachelor's degree.

4923 Laboratory Research: Biology Concentrations
3 hours credit. Prerequisite: Permission in writing (form available in the Biology Department Office) from the faculty mentor, the student's advisor, the Department Chair, and the Dean of the College.
Supervised laboratory research mentored by a faculty member engaged in active research within the student's designated area of concentration. May be repeated for credit, but no more than 6 semester credit hours will apply to a bachelor's degree. Only 6 semester credit hours of BIO 4911-3, BIO 4923 and BIO 4991-3, in any combination, can be taken as BIO electives. Additional research hours of these courses may be taken as free electives, for a maximum of 12 research hours being applied to the bachelor's degree.

4951-3 Special Studies in Biology
(1-0, 2-0, 3-0) 1 to 3 hours credit.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4972 MBRS-MARC Symposium
(2-0) 2 hours credit. Prerequisites: Completion of or concurrent enrollment in BIO 1404 and CHE 1103; or consent of instructor.
A course involving presentations at the frontiers of chemistry, biochemistry, biophysics, and biology, including genetics, microbiology, physiology, and other areas. May be repeated for credit, but not more than 6 semester credit hours may be applied to a bachelor's degree.

4991-3 Honors Research
1 to 3 hours credit. (Hours arranged.) Enrollment limited to biology majors who are members of the Honors College or who are pursuing College of Sciences Honors, and who are in their last two semesters of study. Approval by the Honors College or College Honors Committee is required.
Supervised research and preparation of an Honors Thesis. May be repeated for credit with approval, but no more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. Only 6 semester credit hours of BIO 4911-3, BIO 4923 and BIO 4991-3, in any combination, can be taken as BIO electives. Additional research hours of these courses may be taken as free electives, for a maximum of 12 research hours being applied to the bachelor's degree.

Biomedical Engineering (BME)

Department of Biomedical Engineering, College of Engineering

1002 Introduction to Biomedical Engineering
(2-0) 2 hours credit. Prerequisites: A grade of "C–" or better in BIO 1404, CHE 1103, and MAT 1214, and concurrent enrollment in CHE 1113, MAT 1224, PHY 1903, and PHY 1911.
This course is an introduction to the interdisciplinary field of biomedical engineering. Topics covered include core biomedical engineering areas such as Biomechanics, Biomaterials and Bioimaging.

2103 Physiology for Biomedical Engineering
(3-1) 3 hours credit. Prerequisites: Major in Biomedical Engineering and a grade of "C–" or better in BME 1002 and CHE 1113.
Fundamental principles of general and organs systems physiology, including composition and concentration of cellular and other body fluids, types of transport (e.g., diffusion, membrane transporters), energy (thermodynamics, metabolism), enzymes, feedback control, and membrane potentials with engineering applications and mathematical modeling. This course includes a 3 hour lecture and a 1 hour recitation.

2114 Cellular Biology for Biomedical Engineering
(3-4) 4 hours credit. Prerequisites: Major in Biomedical Engineering and a grade of "C–" or better in BME 2103.
Introduction to cell structure and function, energy conversions, protein sorting, signaling, cytoskeleton, cell adhesion, cell cycle, and mammalian genetics. A laboratory component will focus on techniques and procedures commonly used in cell and molecular biology with bioengineering applications. This class includes a 3 hour lecture and a 4 hour laboratory.

2203 Biomechanics I
(3-1) 3 hours credit. Prerequisites: A grade of "C–" or better in EGR 2323, PHY 1923, and STA 2303, and concurrent enrollment in BME 2211 and BME 2403.
Introduction to the fundamental engineering mechanics with focus on the human body. This course includes a 3 hour lecture and a 1 hour recitation.

2211 Biomedical Engineering Laboratory I
(0-4) 1 hour credit. Prerequisites: A grade of "C–" or better in EGR 2323, PHY 1923, and STA 2303, and concurrent enrollment in BME 2203 and BME 2403.
A biomedical engineering lab in biomechanics and biomaterials. This lab-based course will emphasize on the synthesis and characterization of mechanical properties as well as physical and chemical properties of biomaterials.

2403 Biomaterials I
(3-1) 3 hours credit. Prerequisites: A grade of "C–" or better in EGR 2323, PHY 1923, and STA 2303, and concurrent enrollment in BME 2203 and BME 2211.
Introduction to the fundamental science of natural and synthetic biomaterials used for repairing human tissues and organs. Topics may include material science, biomaterials properties, materials characterization, biomaterial modifications, tissue-biomaterial interactions, and biocompatibility. This course includes a 3 hour lecture and a 1 hour recitation.

3013 Clinical Internship in Biomedical Engineering
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in BME 2114, BME 2203, and BME 2403.
This course will introduce students to the clinical environment, interacting with clinicians on current clinical problems and engineering approaches.

3023 Biomedical Engineering Technology and Product Development
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in BME 3013.
This course will introduce students to current biomedical technologies and product development.

3203 Biomechanics II
(3-1) 3 hours credit. Prerequisites: A grade of "C–" or better in BME 2203 and BME 2211.
Continuation of fundamental biomechanics to include elasticity, viscoelasticity, deformation, stress analysis, strain measurement, and stress and strain in organs. This course includes a 3 hour lecture and a 1 hour recitation.

3303 Bioinstrumentation
(3-1) 3 hours credit. Prerequisites: A grade of "C–" or better in BME 2114, BME 2203, EGR 2323, and PHY 1923, and concurrent enrollment in BME 3311.
Fundamental principles of bioinstrumentation used in clinical and research measurements will be covered. Topics include: principles of transducer operation, amplifiers and signal processing, recording and display. This course includes a 3 hour lecture and a 1 hour recitation.

3311 Biomedical Engineering Laboratory II
(0-4) 1 hour credit. Prerequisites: A grade of "C–" or better in BME 2114, BME 2211, and STA 2303, and concurrent enrollment in BME 3303.
A biomedical engineering lab in bioinstrumentation. This course will involve the design and testing of hardware and software for acquiring and analyzing biological signals.

3403 Biomaterials II
(1-5) 3 hours credit. Prerequisites: A grade of "C–" or better in BME 2211 and BME 2403.
This course will emphasize the characterization of biomaterials, including bulk and surface biomaterials properties as well as biological responses to biomaterials. This course includes a 1 hour lecture and a 5 hour laboratory.

3413 Biocompatibility of Materials
(1-5) 3 hours credit. Prerequisites: A grade of "C–" or better in BME 2211 and BME 2403.
Biocompatibility fundamentals for materials used in medicine. Emphasis for this course will be on optical and fluorescence microscopy of mammalian cells and tissues using sterile technique. Common cell-biomaterial characterization techniques will be performed including live/dead analysis, apoptosis, and quantification of cell signaling markers using immunological and advanced fluorescence assays with practical applications to biomaterial design. This course includes a 1 hour lecture and a 5 hour laboratory.

3503 Fundamentals of Nanobiotechnology
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in BME 2211 and BME 2403.
This course will introduce the basics of nanotechnology. Topics may include microfabrication, microfluidics, nanomaterials, and applications in biomedical engineering.

3703 Biotransport Phenomena
(3-1) 3 hours credit. Prerequisites: A grade of "C–" or better in BME 2114, BME 3303, EGR 2323 and PHY 1923, and concurrent enrollment in BME 3711.
This course introduces the concepts of quantitative modeling of biological systems with respect to mass, momentum and energy transport. We will study the use of conservation laws to model cardiopulmonary, renal, and thermal systems of the human physiology, and also apply these principles to design artificial and extracorporeal devices, drug delivery systems for pharmacokinetic analysis. This course includes a 3 hour lecture and a 1 hour recitation.

3711 Biomedical Engineering Laboratory III
(0-4) 1 hour credit. Prerequisites: A grade of "C–" or better in BME 2114, BME 3303, and STA 2303, and concurrent enrollment in BME 3703.
A biomedical engineering lab in biotransport phenomena. Experiments related to mass, momentum, and energy conservation in biological systems such as measurements of apparent viscosity in microcirculation, oxygen diffusivity and thermal conductivity.

4203 Biomechanics III
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in BME 3203.
Topics may include elasticity, viscoelasticity, deformation, stress analysis, strain measurement, and stress and strain in organs. Tissues covered may include heart, blood vessels, cartilage, and bone.

4293 Topics in Biomechanics
(3-0) 3 hours credit. Prerequisites: Senior status with a major in Biomedical Engineering and a grade of "C–" or better in BME 3203.
Specific topics in biomechanics. May be repeated for credit when topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree.

4403 Molecular Techniques for Cell-Biomaterials Interactions
(2-4) 3 hours credit. Prerequisites: A grade of "C–" or better in BME 3413.
Advanced molecular techniques for characterizing cell-biomaterials interactions will be taught. Current understanding of topics in cell receptors and signaling mechanisms with application for biomaterial design will be emphasized. Topics will include receptor-ligand communication, methods of identification and quantification, and pathways involved for cell to material stress response. This course includes a 2 hour lecture and a 4 hour laboratory.

4423 Tissue Engineering
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in BME 3413.
Students will be introduction to the principles and current practice of tissue engineering. Topics will include selection of mammalian cells, scaffold biomaterials, and selection of chemical and biophysical stimuli for neotissue formation.

4483 Topics in Biomaterials
(3-0) 3 hours credit. Prerequisite: Senior status with a major in Biomedical Engineering and a grade of "C–" or better in BME 3403.
Specific topics in biomaterials. May be repeated for credit when topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree.

4493 Topics in Tissue Engineering
(3-0) 3 hours credit. Prerequisite: Senior status with a major in Biomedical Engineering and a grade of "C–" or better in BME 4423.
Specific topics in tissue engineering. May be repeated for credit when topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree.

4503 Biosensors
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in BME 3503.
Basics to biological detection and in-depth view of device design and performance analyses. Topics may include optical, electrochemical, acoustic, piezoelectric, and nanobiosensors.

4603 Biophotonics
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in BME 3303.
This course will introduce the fundamental principles of biophotonics and will focus on their applications to address critical issues in the frontier of biomedical science and technology. Topics may include fundamentals of light interactions with molecules, cells, and tissues, optical imaging, optical biosensing, flow cytometry, photodynamic therapy, laser tweezers and laser surgery, and nanobiotechnology.

4613 Biomedical Imaging
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in BME 4603.
This course will examine, from a systems perspective, the techniques used in a variety of medical imaging modalities, which include x-ray imaging, computed tomography, magnetic resonance imaging, nuclear medicine, ultrasound imaging, and photoacoustic imaging. The fundamental principles and engineering underlying each imaging modality will be discussed and a performance analysis of each system will be examined.

4703 Biomedical Engineering Thermodynamics
(3-1) 3 hours credit. Prerequisites: A grade of "C–" or better in BME 3703 and EGR 2323.
This course is introduces the basics of engineering thermodynamics and applications in biomedical engineering. The course covers first and second laws, properties of pure substances and mixtures, phase rule, phase and chemical equilibria, and an introduction to statistical thermodynamics. This course includes a 3 hour lecture and a 1 hour recitation.

4713 Cellular Engineering
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in BME 3703.
This course focuses on using engineering skills and principles in the analysis and design of cellular functions. The emphasis will be on protein biochemistry, cell metabolism, signaling and adhesion.

4793 Topics in Cellular Engineering
(3-0) 3 hours credit. Prerequisites: Senior status with a major in Biomedical Engineering and a grade of "C–" or better in BME 4713.
Specific topics in cellular engineering. May be repeated for credit when topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree.

4803 Fundamental Computational Bioengineering
(3-0) 3 hours credit. Prerequisites: Major in Biomedical Engineering and a grade of "C–" or better in BME 2114 and EGR 2323.
This course will include fundamental knowledge and skills of mathematical modeling, computer simulation and visualization, with applications in biomedical engineering.

4903 Senior BME Design I
(3-0) 3 hours credit. Prerequisite: Senior status with a major in Biomedical Engineering and a grade of "C–" or better in BME 3023 and STA 2303.
Development of project proposals and presentation of conceptual designs. Industrial collaboration and/or faculty sponsorship of these projects is encouraged.

4913 Senior BME Design II
(3-0) 3 hours credit. Prerequisite: Senior status with a major in Biomedical Engineering and a grade of "C–" or better in BME 4903.
Continuation of the development of an instructor-approved design project, testing of the design project, and presentation of the findings. Industrial cooperation or faculty sponsorship of projects is encouraged.

Business Law (BLW)

Department of Management, College of Business

3003 Business in Its Legal Environment
(3-0) 3 hours credit.
Study of the legal environment of business, including the social and ethical responsibility of business, legal process concepts, case law and legislative jurisprudence, and constitutional perspectives of doing business. (Credit cannot be earned for both BLW 3003 and BLW 3013.)

3013 Business Law
(3-0) 3 hours credit. Prerequisite: 60 hours of college credit including GBA 2013, or consent of instructor.
Legal analysis of contemporary environment of business law including the common law, legal reasoning, court systems and procedures, constitutional law, torts, contracts and corresponding areas of Article 2 of the Uniform Commercial Code, agency, property, bailment, international law, and related jurisprudential topics in light of social, ethical, political, economic, and global perspectives. (Credit cannot be earned for both BLW 3013 and BLW 3003.)

3023 Business Organizations and Commercial Law
(3-0) 3 hours credit. Prerequisite: BLW 3013 or the equivalent.
A detailed legal analysis of the Uniform Commercial Code, including sales, commercial paper, bank deposits and collections, electronic transfer funds, letters of credit, secured transactions, and creditors' remedies. This course may also include a discussion of the Bankruptcy Act, the legal analysis of the Uniform Partnership Act, and the Business Corporations Act.

3523 Real Estate Law
(3-0) 3 hours credit. Prerequisite: BLW 3013 or the equivalent.
Legal environment of real property ownership and transfer and legal brokerage; estates in land; sales contracts; mortgage transactions; title conveyances; landlord and tenant; restrictions and zoning; eminent domain; federal, state, and local laws governing housing discrimination; and equal opportunity and community reinvestment. (Same as RFD 3523. Credit cannot be earned for both BLW 3523 and RFD 3523.)

4153 Tourism Law
(3-0) 3 hours credit. Prerequisites: MGT 3003 and BLW 3013 or the equivalent.
An investigation of the legal aspects of the accommodation, attraction, destination management organization, restaurant, and transportation industries.

4913 Independent Study
3 hours credit. Prerequisites: MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4953 Special Studies in Business Law
(3-0) 3 hours credit. Prerequisites: MGT 3003 and consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Chemistry (CHE)

Department of Chemistry, College of Sciences

NOTE: All prerequisites for Chemistry (CHE) courses must be completed with a grade of "C–" or better.

Laboratory Course Policy: Space in laboratory courses is limited. To ensure the best possible service to all students, failure to attend the first laboratory and lecture sessions associated with a laboratory course may result in administrative removal from the course.

1003 Chemistry for Allied Health Sciences [TCCN: CHEM 1305.]
(3-0) 3 hours credit.
Introduction to atomic structure, chemical bonding, stoichiometry, states of matter, inorganic chemical reactions, and acids and bases. For majors in occupational therapy, prenursing, and dental hygiene. May not be applied to a major in chemistry, biology, or clinical laboratory sciences. Concurrent enrollment in CHE 1011 is recommended.

1011 Chemistry Laboratory for Allied Health Sciences [TCCN: CHEM 1105.]
(1-4) 1 hour credit. Prerequisites: CHE 1103 and completion of or concurrent enrollment in CHE 1003.
Introduction to chemical laboratory techniques. For majors in occupational therapy, prenursing, and dental hygiene. May not be applied to a major in chemistry, biology, or clinical laboratory sciences.

1013 Elementary Organic and Biochemistry [TCCN: CHEM 1307.]
(3-0) 3 hours credit. Prerequisite: CHE 1003.
A survey of the structures and reactions of some important functional groups of organic chemistry, and the relationship of these functional groups to the chemistry of lipids, carbohydrates, nucleic acids, and proteins. May not be applied to a major in chemistry. Concurrent enrollment in CHE 1021 is recommended. (Formerly CHE 1203. Credit cannot be earned for both CHE 1013 and CHE 1203.)

1021 Organic and Biochemistry Laboratory [TCCN: CHEM 1107.]
(1-4) 1 hour credit. Prerequisite: Completion of or concurrent enrollment in CHE 1013.
Laboratory examination of the properties of some simple organic and biological chemicals; topics include solubility, crystallization, organic reactions, titration, enzyme action, sugars, and vitamins. May not be applied to a major in chemistry. (Formerly CHE 1211. Credit cannot be earned for both CHE 1021 and CHE 1211.)

1033 Chemistry in Our Daily Lives: A Pathway to Scientific Literacy [TCCN: CHEM 1305.]
(3-0) 3 hours credit.
An introduction to essential chemical principles including atomic structure, organic and inorganic compounds, types of chemical reactions, and elementary stoichiometry, among others. The interpretation and evaluation of case studies will be used to develop fundamental knowledge and skills. For nonscience majors only. This course requires a fair amount of writing. May apply toward the Level I Core Curriculum requirement in science.

1073 Basic Chemistry
(3-0) 3 hours credit.
A one-semester preparatory course covering some basic concepts of inorganic chemistry, atomic-molecular structure, and related mathematics. May not be applied to a B.S. or B.A. in Chemistry. May apply toward the Level I Core Curriculum requirement in science.

1103 General Chemistry I [TCCN: CHEM 1311.]
(3-0) 3 hours credit. Prerequisites: Passing grade on Chemistry Placement Examination or grade of "C–" or better in CHE 1073, and completion of or concurrent enrollment in MAT 1073.
An introduction to descriptive inorganic chemistry and atomic-molecular structure, including such fundamental concepts as the periodic system of elements, valency, chemical bonding, reactions and reaction mechanisms, stoichiometry, equilibria, acids and bases, thermochemistry, molecular-kinetic theory, and states of matter. Concurrent enrollment in CHE 1121 is recommended. May apply toward the Level II Core Curriculum requirement in science. (Same as CHE 1143. Credit cannot be earned for both CHE 1103 and CHE 1143.)

1113 General Chemistry II [TCCN: CHEM 1312.]
(3-0) 3 hours credit. Prerequisite: A grade of "C–" or better in CHE 1103 or the equivalent.
A continuation of CHE 1103. Elementary inorganic and physical chemistry; topics include solutions, electrolytes, oxidation-reduction reactions, reaction trends, coordination chemistry, basic thermodynamics, chemical kinetics, electrochemistry, and nuclear chemistry. Primarily for science majors. May apply toward the Level II Core Curriculum requirement in science. (Same as CHE 1153. Formerly CHE 1303. Credit cannot be earned for more than one of the following: CHE 1113, CHE 1153, or CHE 1303.)

1121 General Chemistry I Laboratory [TCCN: CHEM 1111.]
(1-4) 1 hour credit. Prerequisite: A grade of "C–" or better or concurrent enrollment in CHE 1103 (or CHE 1143).
An introduction to chemical problem solving and the basic operations of the chemical laboratory, and a survey of inorganic chemical reactions. This course consists of problem sessions, lecture-demonstrations, and/or laboratory experience. Laboratory to accompany CHE 1103 and CHE 1143. This laboratory includes a lecture component. (Formerly CHE 1122. Credit cannot be earned for both CHE 1121 and CHE 1122.)

1131 General Chemistry II Laboratory [TCCN: CHEM 1112.]
(1-4) 1 hour credit. Prerequisites: A grade of "C–" or better in CHE 1121, and a grade of "C–" or better or concurrent enrollment in CHE 1113 (or CHE 1153).
Techniques of qualitative and quantitative chemical analysis, illustrated primarily via inorganic chemical systems and their reactions. Laboratory to accompany CHE 1113 and CHE 1153. This laboratory includes a lecture component. (Formerly CHE 1312 and CHE 1132. Credit cannot be earned for more than one of the following: CHE 1131, CHE 1132 or CHE 1312.)

1143 Principles of Chemistry I
(3-0) 3 hours credit. Prerequisites: A score of 60% or higher on the Chemistry Placement Examination, or a grade of "B–" or better in CHE 1073 and a grade of "B–" or better in MAT 1073, or admission through the Honors College.
The first of a two-part introduction to the chemical sciences for chemistry majors and other students interested in the chemical sciences. An introduction to chemical reactions and atomic-molecular structure, including chemical formulas and stoichiometry, the periodic system of elements, electrons in atoms, valency, chemical bonding, states of matter, solutions, chemical equilibrium, and acids and bases. May be substituted for CHE 1103, which satisfies the Level II Core Curriculum requirement in science. (Same as CHE 1103. Credit cannot be earned for both CHE 1103 and CHE 1143.)

1153 Principles of Chemistry II
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in CHE 1143 or a grade of "B–" or better in CHE 1103.
A continuation of CHE 1143 for chemistry majors and other students interested in the chemical sciences. Topics include oxidation-reduction reactions, solubility, coordination complexes, thermochemistry and thermodynamics, electrochemistry, chemical kinetics, and nuclear chemistry. May be substituted for CHE 1113, which satisfies the Level II Core Curriculum requirement in science. (Same as CHE 1113. Credit cannot be earned for both CHE 1113 and CHE 1153.)

2603 Organic Chemistry I [TCCN: CHEM 2323.]
(3-0) 3 hours credit. Prerequisite: CHE 1113 (or CHE 1153).
An elementary study of structure, stereochemistry, reactions, and reaction mechanisms associated with organic compounds. Primarily for chemistry, premed, and science majors. Discussion and practice of problems amplifying and clarifying the course. (Formerly CHE 2203, CHE 2204, and CHE 2604. Credit cannot be earned for more than one of the following: CHE 2203, CHE 2204, CHE 2603, or CHE 2604.)

2612 Organic Chemistry I Laboratory [TCCN: CHEM 2223.]
(1-4) 2 hours credit. Prerequisites: A grade of "C–" or better or concurrent enrollment in CHE 1131 and CHE 2603.
The first of two semesters of organic chemistry laboratory. Qualitative analysis and determination of the physical constants of organic compounds. Separation, identification, and elementary synthesis of organic compounds. Laboratory techniques—crystallization, distillation, chromatographic and spectroscopic techniques (IR, NMR, MS)—are emphasized. This laboratory includes a lecture component. (Formerly CHE 2242. Credit cannot be earned for both CHE 2612 and CHE 2242.)

2803 Quantitative Topics for Chemists
(3-0) 3 hours credit. Prerequisite: MAT 1224.
This course is intended for students majoring in chemistry and serves as a prerequisite for the introductory courses in physical chemistry. Topics include: power series, linear algebra, determinants, matrices, vector spaces, multi-variable calculus (partial differentiation, multiple integrals), complex variables, ordinary differential equations, numerical analysis, and numerical methods in integration, probability, statistics, regression methods and symbolic programming. (Formerly CHE 2802. Credit cannot be earned for both CHE 2802 and CHE 2803).

3214 Analytical Chemistry
(2-5) 4 hours credit. Prerequisites: A grade of "C–" or better in CHE 1113 (or CHE 1153) and CHE 1131.
Topics in quantitative analysis including wet chemical and basic instrumental analysis; gravimetric, volumetric, electrochemical and spectrophotometric determinations combined with error analysis; fundamentals of chemical separations; applications of stoichiometry and chemical equilibria to design efficient analytical protocols. (Formerly CHE 3103 and CHE 3213. Credit cannot be earned for more than one of the following: CHE 3103, CHE 3213, or CHE 3214.)

3464 Descriptive Inorganic Chemistry
(3-3) 4 hours credit. Prerequisites: CHE 1113 (or CHE 1153) and CHE 1131. Corequisite: CHE 2603 recommended.
The basic principles of inorganic chemistry applied to the properties, reactions, and periodicity of inorganic elements and compounds. Includes the synthesis and characterization of inorganic compounds and the use of specialized laboratory techniques. (Formerly CHE 3264. Credit cannot be earned for both CHE 3464 and CHE 3264.)

3643 Organic Chemistry II
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in CHE 2603, and a grade of "C–" or better or concurrent enrollment in CHE 2612.
Continuing study of fundamentals of structure, reactions, and reaction mechanisms of phosphorus and sulfur; polyfunctional organic compounds. A continuation of CHE 2603. (Formerly CHE 2303 and CHE 2623. Credit cannot be earned for more than one of the following: CHE 2303, CHE 2623, or CHE 3643.)

3652 Organic Chemistry II Laboratory
(1-4) 2 hours credit. Prerequisites: Grades of "C–" or better in CHE 2603 and CHE 2612.
Quantitative and continuing qualitative study of organic reactions and molecular structure through functional group interactions and spectroscopic techniques. Simple and multistep syntheses of organic compounds. A continuation of CHE 2612. This laboratory includes a lecture component. (Formerly CHE 2342 and CHE 2632. Credit cannot be earned for more than one of the following: CHE 2342, CHE 2632 or CHE 3652.)

3673 Organic Chemistry II with Biological Applications
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in CHE 2603, and a grade of "C–" or better or concurrent enrollment in CHE 2612.
Continuing study of fundamentals of structure, mechanism, and reactivity including those in aqueous media and complex biological macromolecules. A continuation of CHE 2603 with emphasis in topics relevant to biology. Chemistry B.S. majors may not substitute this course for CHE 3643. Credit cannot be earned for more than one of the following: CHE 2303, CHE 2623, CHE 3643, or CHE 3673.)

3804 Physical Chemistry I and Laboratory
(3-3) 4 hours credit. Prerequisites: CHE 1113 (or CHE 1153), CHE 1131, CHE 2803, CHE 3214, PHY 1963 and PHY 1971.
The laws of thermodynamics; free energy and chemical potential; ideal and nonideal gases; equilibria; solutions; kinetic theory of gases; kinetics. Laboratory study of selected physicochemical principles and methods to reinforce lecture topics. Data acquisition, data analysis, and report writing are stressed. (Formerly CHE 3204 and CHE 3803/3811. Credit cannot be earned for more than one of the following: CHE 3204, CHE 3803/3811, or CHE 3804.) (Formerly titled "Thermodynamics and Kinetics.")

3824 Physical Chemistry II and Laboratory
(3-3) 4 hours credit. Prerequisites: CHE 1113 (or CHE 1153), CHE 1131, CHE 2803, CHE 3214, CHE 3804, PHY 1963 and PHY 1971.
Introduction to atomic and molecular quantum chemistry; group theory; electronic, rotational, vibrational, and electronic spectroscopies; and statistical mechanics including ensembles and their use in deriving thermodynamic properties using quantum level information. Laboratory study of selected physicochemical principles and methods to reinforce lecture topics. Data acquisition, data analysis, and report writing are stressed. (Formerly CHE 3224 and CHE 3823/3831. Credit cannot be earned for more than one of the following: CHE 3224, CHE 3823/3831, or CHE 3824.) (Formerly titled "Quantum Mechanics, Spectroscopy, and Statistical Mechanics.")

3854 Basic Biophysical Chemistry
(3-3) 4 hours credit. Prerequisites: Grades of "C–" or better in CHE 2603, MAT 1214, PHY 1963 (or PHY 1623), and PHY 1971 (or PHY 1631).
The primary goal of basic biophysical chemistry is to help students develop a fundamental understanding of the physical principles that drive biological processes, particularly as applied to proteins. Topics covered include protein structure, molecular thermodynamics, structure simulation, basic statistical mechanics, quantum mechanics and spectroscopy.

4213 Instrumental Analysis
(2-5) 3 hours credit. Prerequisites: CHE 3214, CHE 3652, and CHE 3824 (or CHE 3854).
The physical and chemical principles of modern instrumental techniques used for chemical analysis. Topics include emission, absorption, magnetic resonance, and FTIR spectroscopies, mass spectrometry, and chromatography. The use of spectrometric and chromatographic instrumentation in the separation, identification, and quantitation of compounds in chemical systems. (Formerly CHE 4103. Credit cannot be earned for both CHE 4213 and CHE 4103.)

4223 Electroanalysis
(3-0) 3 hours credit. Prerequisites: Grades of "C–" or better in CHE 3214 and CHE 3824 (or CHE 3854), or consent of instructor.
Principles of electrochemical analysis, including selected topics on electrochemical equilibria, electrode kinetics, electrochemical techniques, and amperometric sensors and biosensors.

4283 NMR Spectroscopy
(3-0) 3 hours credit. Prerequisite: A grade of "C–" or better or concurrent enrollment in CHE 3824 (or CHE 3854), or consent of instructor.
A lecture course with demonstrations dealing with the basic theory and applications of one- and two-dimensional nuclear magnetic resonance spectroscopy, including the interpretation of spectra. The parameters and pulse sequences for various types of NMR experiments and explanations of how molecular structural information can be obtained will be presented. (Formerly CHE 4363. Credit cannot be earned for both CHE 4283 and CHE 4363.)

4303 Biochemistry
(3-0) 3 hours credit. Prerequisite: CHE 3643.
Structure and function relationships of biologically important molecules; energy production, storage and utilization; amino acids, nucleic acids, peptides and proteins; intermediary metabolism; lipids and membranes. (Formerly CHE 4503. Credit cannot be earned from both CHE 4303 and CHE 4503. Credit cannot be earned for both CHE 4303 and BIO 3513. BIO 3513 cannot be taken as a chemistry elective.)

4463 Inorganic Chemistry
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in CHE 3464, and completion of or concurrent enrollment in CHE 3804 or CHE 3854.
A study of the structure, bonding, and properties of inorganic compounds; acid-base theory, crystalline state, coordination chemistry, and other advanced topics. (Formerly CHE 4263. Credit cannot be earned for both CHE 4463 and CHE 4263.)

4473 Bioinorganic Chemistry
(3-0) 3 hours credit. Prerequisites: Grades of "C–" or better in CHE 3464, CHE 3804 (or CHE 3854), and either CHE 4303 or CHE 4463 (or concurrent enrollment in either CHE 4303 or CHE 4463), or consent of instructor.
Study of the functions, reaction sites, mechanisms, molecular architecture, and medicinal aspects of metal ions in biological systems, including bioorganometallic compounds. A discussion of the experimental techniques will be included.

4613 Introduction to Polymer Chemistry
(3-0) 3 hours credit. Prerequisites: Grades of "C–" or better in CHE 3643 and CHE 3804, CHE 3824 (or CHE 3854), or consent of instructor.
Fundamental concepts of polymer chemistry, including mechanisms for synthesis, kinetics, and copolymerization; molecular weight, stereoisomerism, morphology, solubility, and thermal transitions; rubber and viscoelasticity; and the molecular basis for physical properties. (Formerly CHE 4203. Credit cannot be earned for both CHE 4613 and CHE 4203.)

4623 Chemistry of Heterocyclic Compounds
(3-0) 3 hours credit. Prerequisite: CHE 3643 or consent of instructor.
The chemistry of nitrogen, oxygen, and sulfur heterocycles. Five- and six-membered ring systems with one or more heteroatoms. Applications in the field of synthetic drugs. (Formerly CHE 4403. Credit cannot be earned for both CHE 4623 and CHE 4403.)

4653 Synthesis and Biosynthesis of Natural Products
(3-0) 3 hours credit. Prerequisites: CHE 2603 and CHE 3643, or consent of instructor. BIO 3513 is recommended.
The course is designed to give an overview of the biosynthetic pathways and modern biomimetic approaches to natural products with an emphasis on biologically and medicinally important secondary metabolites. The course will be valuable for those who plan to work at the interface of chemistry and biology, drug discovery and organic synthesis.

4663 The Medicinal Chemistry of Organic Compounds
(3-0) 3 hours credit. Prerequisites: Grades of "C–" or better in CHE 3643 and CHE 3804 (or CHE 3854), or consent of instructor.
The design, synthesis and refinement of medicinal agents based on organic compounds. Topics include drug discovery, receptor-drug interactions, drugs targeting nucleic acids, metabolism, delivery and activation concepts, and computational approaches.

4673 Physical Organic Chemistry
(3-0) 3 hours credit. Prerequisite: A grade of "C–" or better in CHE 3643, or consent of instructor.
The study of the relation between structure of carbon compounds and their reactivity and properties: molecular orbital theory and its applications to aromaticity and pericyclic reactions, stereochemistry and conformational analysis, thermodynamic and kinetic data, linear free energy relationships, isotope effects, and catalysis.

4843 Advanced Physical Chemistry
(3-0) 3 hours credit. Prerequisite: CHE 3824 or consent of instructor.
An advanced study of group theory, and its application to molecular orbital theory, electronic/vibrational/rotational spectroscopy, and chemical reactivity.

4853 Computational Chemistry
(3-0) 3 hours credit. Prerequisite: CHE 3824 or consent of instructor.
The application of molecular mechanical, molecular orbital, and density functional methods to problems of molecular structure, property, reactivity, and spectroscopy.

4863 Surfaces and Solids
(3-0) 3 hours credit. Prerequisite: CHE 3824 or consent of instructor.
The course will provide a senior-undergraduate-level introduction to the subjects of surfaces and solids. Emphasis will be placed on the thermodynamics, kinetics, and dynamics of adsorption and absorption processes and relevant spectroscopic techniques for the elucidation of structure.

4883 Introduction to Mass Spectrometry
(2-3) 3 hours credit. Prerequisite: A grade of "C–" or better in CHE 3804 (or CHE 3854), or consent of instructor.
The basic principles of interpreting mass spectra and how they are produced. The effect the method of ion production has on the observed mass spectra, and the theory and operation of various types of mass spectrometers will be covered. The basic theory of ion-molecule reactions and principles and practice of biological mass spectrometry and other advanced topics will be presented. (Formerly CHE 4383. Credit cannot be earned for both CHE 4883 and CHE 4383.)

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which this course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4923 Special Project in Chemistry
3 hours credit. Prerequisite: Consent of Department Chair (form available in department office).
A special laboratory research or library readings project under the direction of a faculty member that results in a report. Limited to science majors in their final year of undergraduate study.

4953 Special Studies in Chemistry
(3-0) 3 hours credit. Prerequisites: Upper-division standing and consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4971 Proseminar
(0-3) 1 hour credit. Prerequisite: CHE 3643.
Oral reports on current publications in chemistry and chemical technology using important chemical reference materials and periodicals. May be repeated for credit, but not more than 2 semester credit hours may be applied toward the degree.

4993 Honors Research
3 hours credit. Prerequisites: Enrollment limited to candidates for College Honors during their last two semesters; approval by the College Honors Committee.
Supervised research and preparation of an honors thesis. May be repeated only once with approval.

Chinese (CHN)

Department of Modern Languages and Literatures, College of Liberal and Fine Arts

1014 Elementary Chinese I [TCCN: CHIN 1411.]
(3-2) 4 hours credit.
Fundamentals of Chinese offering the opportunity to develop basic listening, speaking, reading, and writing skills. Introduction of Chinese characters and Chinese culture.

1024 Elementary Chinese II [TCCN: CHIN 1412.]
(3-2) 4 hours credit. Prerequisite: CHN 1014, an equivalent, an appropriate placement test score, or consent of instructor.
Fundamentals of Chinese offering the opportunity to develop basic speaking, listening, reading, and writing skills. Further study of Chinese characters and Chinese culture.

2013 Intermediate Chinese I [TCCN: CHIN 2311.]
(3-1) 3 hours credit. Prerequisite: CHN 1024, an equivalent, an appropriate placement test score, or consent of instructor.
Continued opportunity to develop listening, speaking, reading, and writing skills through structural analysis of the Chinese language. Continued exposure to Chinese culture.

2023 Intermediate Chinese II [TCCN: CHIN 2312.]
(3-1) 3 hours credit. Prerequisite: CHN 2013, an equivalent, an appropriate placement test score, or consent of instructor.
Continued opportunity to develop listening, speaking, reading, and writing skills through structural analysis of the Chinese language. Continued exposure to Chinese culture.

Civil Engineering (CE)

Department of Civil and Environmental Engineering, College of Engineering

1301 Introduction to Civil Engineering
(1-0) 1 hour credit. Prerequisites or concurrent enrollment: MAT 1093 and WRC 1013.
Engineering as a career, engineering ethics, and approaches to engineering problem formulation and solution using principles of design and decision making.

1403 Engineering Communication
(2-3) 3 hours credit.
Technical communication: oral, written, and graphic; introduction to engineering analysis, design, and synthesis; and computer-aided graphics.

2103 Civil Engineering Measurements
(2-3) 3 hours credit. Prerequisites or concurrent enrollment: MAT 1214 and CE 1301.
Principles of measurement and error analysis; application of equipment to acquire, analyze, and control data in civil engineering systems; and introduction to plane surveying.

2633 Environmental Engineering
(3-0) 3 hours credit. Prerequisites: CE 1301 and CHE 1103.
Principles, analysis, and design related to environmental monitoring, protection, and remediation systems. Topics include environmental quality and legislation, modeling, water treatment, wastewater treatment, solid and hazardous waste management, air and noise pollution, and radioactive waste management.

3103 Mechanics of Solids
(2-3) 3 hours credit. Prerequisites: EGR 2103 and EGR 2323.
Internal forces and deformations in solids; stress, strain, and their relations; stresses and deflections in beams column theory and analysis; and engineering applications.

3113 Structural Analysis
(3-0) 3 hours credit. Prerequisite: CE 3103.
Forces and deflections in structural systems; considers stationary and moving loads and exact and approximate methods.

3173 Numerical Methods
(3-0) 3 hours credit. Prerequisite: EGR 2323.
An introduction to numerical and analytical methods applied to civil and environmental engineering. Techniques for computer solution of linear and nonlinear simultaneous equations; eigenvalue analysis; finite differences; numerical integration; numerical solutions to ordinary differential equations. Introduction to Visual Basic in Excel applications. Case studies in the various branches of civil engineering.

3213 Reinforced Concrete Design
(2-3) 3 hours credit. Prerequisites or concurrent enrollment: CE 3113 and CE 3243.
Ultimate strength theory and design for reinforced concrete members.

3233 Steel Design
(2-3) 3 hours credit. Prerequisites or concurrent enrollment: CE 3113 and CE 3243.
Analysis and design of steel tension members, beams, columns, and bolted or welded connections.

3243 Properties and Behavior of Engineering Materials
(2-3) 3 hours credit. Prerequisites: CE 3103 and STA 2303.
Structure, properties, and behavior of engineering materials; measurement and analysis of material properties and behavior. Laboratory exercises illustrate typical material behavior and selected principles of mechanics.

3413 Geotechnical Engineering and Applications
(2-3) 3 hours credit. Prerequisite: CE 3103. Prerequisites or concurrent enrollment: CE 3173 and GEO 4023.
Exploration, sampling, and in-situ measurements; laboratory testing; review of fundamental properties of soil and rock; flow-through porous media; the effective stress principle and computation of in-situ stress distributions; shear strength of soils and one-dimensional consolidation settlement; introduction to slope stability.

3543 Project Design and Construction Management
(3-0) 3 hours credit. Prerequisites: CE 2103, CE 3213, CE 3233, and EGR 3713.
Civil Engineering design process, project specifications, and construction management. Topics covered include design process/practices, project proposals, pricing, specifications, bidding strategies, project management/scheduling and project financing. In addition, all students registered for this course are required to take a commercially offered practice FE (Fundamentals of Engineering) exam, such as the one offered by Professional Publications, Inc., or equivalent, as instructed by the Department. The fee for the exam is covered by the course fee and it is paid by UTSA. The grade received in the practice FE exam is worth 10% of the course grade. The course concludes by forming the student teams for CE 4813 Civil Engineering Design and identifying their projects. Course must be taken the semester prior to taking CE 4813.

3603 Fluid Mechanics
(2-3) 3 hours credit. Prerequisites: EGR 2103 and EGR 2513.
Fluid properties, fluid statics concepts, equations of fluid flow in pipes and open channels, and flow-through porous media.

3633 Water and Wastewater Treatment
(2-3) 3 hours credit. Prerequisites: CE 2633 and CE 3603.
The application of chemical, biochemical, and physical processes to water treatment, wastewater treatment, and pollution control.

3723 Applied Hydrology
(3-0) 3 hours credit. Prerequisite: CE 3603.
Technical elective course. Hydrologic cycle, precipitation, hydrologic abstractions, surface runoff; unit hydrographs; synthetic hydrographs; peak discharge relationships; flood frequency analysis; flood and reservoir routing; and groundwater hydrology.

4013 Civil Engineering Systems Analysis
(3-0) 3 hours credit. Prerequisite: EGR 3713.
Technical elective course. Systems approach to optimization and problem solving; operations research applications in civil engineering; mathematical modeling and analysis techniques including linear programming, dynamic programming, decision analysis and use of software to solve linear and nonlinear programming problems. (Formerly CE 3713. Credit cannot be earned for both CE 4013 and CE 3713.)

4103 Advanced Steel Design
(3-0) 3 hours credit. Prerequisite: CE 3233.
Technical elective course. Connection design, welded and bolted, moment-resistant connections, plate girders, column stability, bracing design, and seismic design of frames.

4123 Highway Engineering
(3-0) 3 hours credit. Prerequisites: CE 2103, CE 3413, and STA 2303.
General characteristics of highway design; horizontal and vertical alignment, cross-sections, earthwork, drainage, and pavement; and economic analysis.

4133 Advanced Reinforced Concrete
(3-0) 3 hours credit. Prerequisite: CE 3213.
Technical elective course. Torsion design, design of stairs, bending of curved elements, biaxial loads on columns, slenderness effects, joint design, yield line theory, two-way slab systems, strut-and-tie methods, seismic detailing, relationship between research and building code.

4153 Prestressed Concrete
(3-0) 3 hours credit. Prerequisite: CE 3213.
Technical elective course. Design of statically determinate and indeterminate structures, estimation of prestress loss, flexure and shear strength, deflections and stress control, composite construction, and continuous span theory.

4253 Introduction to Masonry and Timber Design
(3-0) 3 hours credit. Prerequisites or concurrent enrollment: CE 3113 and CE 3243.
Technical elective course. Design philosophy and methodology for masonry and timber structures. Flexure design, axial load design, and shear design of basic masonry and timber components. (Formerly CE 3253. Credit cannot be earned for both CE 4253 and CE 3253.)

4293 Geographic Information Systems (GIS)
(3-0) 3 hours credit. Prerequisite: CE 2103 or GEO 4023.
Technical elective course. Introduces vector, raster and tabular concepts, emphasizing the vector approach. Topics include: spatial relationships, map features, attributes, relational database, layers of data, data ingesting, digitizing from maps, projections, output, applications, and availability of public data sets. Focus will be placed on spatial/temporal data analyses using digitized maps and database information in an area of Civil Engineering specialization.

4303 Hydrometeorology
(3-0) 3 hours credit. Prerequisite: CE 3603.
Technical elective course. The main objective of this course is to familiarize the student with topics related to local and global distribution of freshwater. Conceptualizations of the water balance/budget are developed using principles of physical hydrology and meteorology. Emphasis will be on recent research and modern methods for data analysis and modeling. Real-life events and phenomena will be discussed. In addition to the text, material will be presented from other sources. Guest instructors will give presentations on some case studies.

4313 Computer-Aided Design in Civil Engineering
(2-3) 3 hours credit. Prerequisites: CE 1403, CE 2103, and CE 3603.
Organization and programming of civil engineering problems for computer solutions; application of computer-aided design in civil engineering.

4403 Advanced Characterization of Highway Materials
(3-0) 3 hours credit. Prerequisite: CE 3243.
Technical elective course. Basic and advanced level of the fundamentals of material response to static and repeated loading; emphasis on the deformation and fatigue behavior of asphalt mixtures, constitutive modeling for mixtures, microstructure characterization for mixtures, nondestructive testing of pavements, asphalt binder characterization, unbound materials (base and sub-base materials) evaluation and characterization.

4453 Transportation Engineering
(3-0) 3 hours credit. Prerequisite: CE 4123.
Technical elective course. Study of the Highway Capacity Manual, traffic stream parameters and relationships, analytical techniques in traffic engineering such as capacity analysis, queuing theory, and traffic simulation. Design and operation of advanced traffic management systems including signalization, real-time motorist information, urban incident management, and ITS concepts. (Formerly CE 4233. Credit cannot be earned for both CE 4453 and CE 4233.)

4463 Foundation Engineering
(3-0) 3 hours credit. Prerequisite: CE 3413.
Technical elective course. Shallow and deep foundations including: footings, slabs on-grade, cofferdams, sheet-pile walls, drilled shafts, piles and retaining walls. (Formerly CE 4413. Credit cannot be earned for both CE 4463 and CE 4413.)

4603 Water Resources Engineering
(3-0) 3 hours credit. Prerequisites: CE 2633 and CE 3603. Corequisite: CE 3633.
Analysis and design of surface and subsurface water resource facilities. Design of water supply, wastewater collection, and storm water systems.

4613 Environmental Chemistry
(3-0) 3 hours credit. Prerequisite: CE 3633.
Technical elective course. This course explores the chemistry of the environment, the chemistry underlying environmental problems and solutions to environmental problems. Emphasis is placed on thermodynamics and kinetics of reaction cycles; sources, sinks and transport of chemical species; and quantitation of chemical species. Examples are selected from the chemistry of natural and contaminated air, water, and soil.

4723 Hydraulic Systems Design
(3-0) 3 hours credit. Prerequisite: CE 3603.
Technical elective course. Analysis and design of water resource systems; dam and reservoir design for recharge, flood control, and water supply and demand forecasting, optimization of multi-objective systems, and allocations planning and management.

4813 Civil Engineering Design
(2-3) 3 hours credit. Prerequisites: CE 3213, CE 3233, and CE 3543.
Opportunity to apply design skills to execution of an open-ended integrated civil engineering design project, including field and laboratory investigations, numerical and scale modeling, design, and formal oral and written presentation of results. Considers safety, reliability, environmental, economic, and other constraints, as well as ethical and social impacts. Students must take the FE (Fundamentals of Engineering) exam during the semester they take this course. Students that pass the FE exam during their last semester of study qualify for a Professional Alumni Award.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair and Dean of the College.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4953 Special Studies in Civil Engineering
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Classics (CLA)

Department of Philosophy and Classics, College of Liberal and Fine Arts

1114 Basic Individualized Instruction
4 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 8 hours of basic individualized instruction will apply to a bachelor's degree.

2013 Introduction to Ancient Greece
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Introduction to the civilization and cultural achievements of ancient Greece, including history, religion, philosophy, literature, and art.

2023 Introduction to Ancient Rome
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Introduction to the civilization and cultural achievements of ancient Rome, including history, religion, philosophy, literature, and art.

2033 Introduction to Classical Literature
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Introductory study of selected works of ancient Greek and Roman authors, with emphasis on epic, drama, satire, and lyric.

2113 Intermediate Individualized Instruction
3 hours credit. Prerequisites: Successful completion of LAT 1114 or GRK 1114 or equivalent. Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 hours of intermediate individualized instruction will apply to a bachelor's degree.

2323 Classical Mythology
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Critical survey of secular and religious classical mythology; attention to the use of myth in ancient literature and the functions of myth in historical, cultural, and cross-cultural contexts.

2953 Topics for the Study of the Ancient Mediterranean
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Organized course offering introductory and broad examinations of topics important for the study of the Ancient Mediterranean world that are not covered during typical course offerings. Topics cover social and cultural history, etymology, and the art and archaeology of the Ancient Mediterranean. May be repeated for credit when topics vary.

3023 Classical Myths and Literature
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Critical examination of ancient Greek and Roman myths and their functions in literary texts and ancient societies; attention to current theories and methodologies of mythic analysis.

3053 Topics in Classical Genres
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Consideration of texts selected to illustrate the structural and conceptual properties of a given genre in the classical world, e.g., comedy, epic, or tragedy. May be repeated for credit when topics vary.

3063 Topics in the Art and Architecture of the Classical World
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
A study of one or more themes, periods, traditions, or archaeological sites in the art and architecture of the ancient Greek and Roman world. May be repeated for credit when topics vary.

3123 Cultural Issues in Classical Antiquity
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Examination of issues in ancient Greek and Roman power relations and social differences as reflected in classical literature and historical material. Coverage of such topics as slavery, attitudes towards barbarians, gender, and intergenerational strife. May be repeated for credit when topics vary.

3513 Topics in Classical History
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
An examination of selected events, trends, and transformations in the history of ancient Greece and ancient Rome. May be repeated for credit when topics vary.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4953 Special Studies in Classics
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies courses may be repeated for credit when the topics vary, but not more than 6 hours, regardless of discipline, will apply to a bachelor's degree.

4973 Senior Seminar in Classics
(3-0) 3 hours credit. Prerequisite: 12 upper-division credit hours in Classics or approved upper-division courses in other disciplines.
Undergraduate capstone experience for students in the Classics emphasis and minor, open to eligible students from other disciplines in their junior or senior year. The seminar focuses on the development of research methodologies for the study of the ancient world. Subject varies with instructor, but the course will emphasize a combination of historical, linguistic, archaeological and anthropological approaches, reflecting the interdisciplinary nature of contemporary Classical Studies. May be repeated once for credit when topics vary. (Formerly titled "Seminar for Classics Majors.")

4991-3 Honors Thesis
1 to 3 hours credit. Prerequisites: Consent of instructor and Department Scholarship and Honors Committee.
Supervised research and preparation of an Honors Thesis for the purpose of earning Classical Studies Honors. May be repeated once with advisor approval.

College of Architecture-Foundation (COA)

College of Architecture

1113 Introduction to the Built Environment
(3-0) 3 hours credit.
Introduction to design and construction in the built environment through the concepts of place, context, ecology, space, analysis, aesthetics and research. Includes consideration of issues associated with the practice of architecture, interior design, landscape architecture, planning, urbanism and construction.

1133 Building Technology I
(3-0) 3 hours credit.
Introduction to concepts and skills fundamental to structure, construction, building enclosure, sustainability, and interior environments. Analysis and selection of materials, components, and assemblies. Introduction to the historical role of materials in architectural and interior design. (Formerly ARC 2213. Credit cannot be earned for both ARC 2213 and COA 1133.)

1213 Design I [TCCN: ARCH 1303.]
(0-6) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in COA 1313.
Introduction to design through a focus on design literacy and the creative conceptualization of issues fundamental to the design of human environments. (Formerly ARC 1213. Credit cannot be earned for both ARC 1213 and COA 1213.)

1223 Design II
(0-6) 3 hours credit. Prerequisites: COA 1213 and COA 1313.
Introduction to design as a broadly creative process based on the consideration of spatial experience, context, program and building form. (Formerly ARC 1223 and ARC 1226. Credit cannot be earned for more than one of the following: ARC 1223, ARC 1226, or COA 1223.)

1313 Design Visualization [TCCN: ARCH 1307.]
(0-6) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in COA 1213.
Introductory exploration of graphic processes and techniques utilized in the design and construction of the built environment for the representation, visualization, analysis, and presentation of the designed environment. Completion of or concurrent enrollment in this course is required in order to take COA 1213. (Formerly ARC 1313. Credit cannot be earned for both ARC 1313 and COA 1313.)

Communication (COM)

Department of Communication, College of Liberal and Fine Arts

1001 Freshman Topics in Communication
(1-1) 1 hour credit.
For entering freshmen in the College of Liberal and Fine Arts with less than 15 hours of coursework and who are interested in majoring in Communication. Critical study of topics in Communication. Innovative classroom and learning techniques are used to introduce students to these topics and to help strengthen critical thinking, problem solving, and writing skills. Enrichment activities may include film, television programs, Web resources, field trips, and guest lectures by other faculty. Content varies with each instructor. A maximum of 3 semester credit hours of freshman topics courses may apply to a bachelor's degree, although this specific topic may be taken only once.

1043 Introduction to Communication [TCCN: SPCH 1311.]
(3-0) 3 hours credit. Prerequisite: WRC 1013.
Introduction to the fundamental processes of human communication, with emphasis on contexts such as interpersonal, group, and organizational communication. Emphasis is given to those skills that promote oral proficiency.

1053 Business and Professional Speech [TCCN SPCH 1321.]
(3-0) 3 hours credit. Prerequisite: WRC 1013.
Examination of the basic communication process through oral channels with practical applications for business. Emphasis is on techniques of business and professional presentation, including components of message strategies, nonverbal communication, multimedia support, and persuasive speaking. Oral presentations with written components required.

2113 Public Speaking [TCCN: SPCH 1315.]
(3-0) 3 hours credit. Prerequisite: WRC 1013.
Theory and practice of speaking in formal settings. Emphasis on preparation, adaptation, and delivery of oral presentations.

2343 Introduction to Mass Communication [TCCN: COMM 1307.]
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum English Rhetoric/Composition requirement.
Critical examination of how the mass media interact with individuals and social groups. Exploration of media industries, products, and processes from various disciplinary perspectives.

2433 Editing
(3-0) 3 hours credit. Prerequisite: ENG 2413.
Principles and applications of production editing and technical editing, including evaluation and revision of style, tone, and organization of documents. Practice in use of editing symbols and copy marking. (Same as ENG 2433. Credit cannot be earned for both COM 2433 and ENG 2433.)

2733 Introduction to Communication Technologies
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum English Rhetoric/Composition requirement.
Overview of media and networks used for entertainment and information distribution, storage, and retrieval. Emphasis on the interrelationships among technology, economics, policy, society, and culture.

2801 Forensic Activities [TCCN: SPCH 2144.]
(1-0) 1 hour credit. Prerequisite: Consent of instructor.
Opportunity to study the preparation and presentation of oral argument or speaking in competitive situations. May be repeated for credit.

3023 Foundations of Communication
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum English Rhetoric/Composition requirement.
Acquaints students with a range of disciplinary areas of study in communication. Addresses how communication influences our understandings of and in various social contexts and, in turn, how these understandings affect communicative choices. Addresses basic strategies and technologies used for information access, retrieval, and processing. Required of and restricted to pre-Communication students, or students majoring or minoring in Communication.

3073 Conduct of Communication Inquiry
(3-0) 3 hours credit. Prerequisite: COM 3023.
Introduction to basic research methods as they apply to communication inquiry. Issues include applications of quantitative and qualitative research designs, descriptive and inferential statistics, and interpretation and critical evaluation of findings. Required of and restricted to pre-Communication students, or students majoring or minoring in Communication.

3083 Language and Communication Theory
(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in COM 3023.
Overview of theories of language and communication. Focuses on understanding how language and communication affect individual and social action. Required of and restricted to pre-Communication students, or students majoring or minoring in Communication.

3113 Argumentation and Debate
(3-0) 3 hours credit. Prerequisite: COM 1043, COM 1053, or COM 2113.
Offers the opportunity to train in the preparation, construction, and critical analysis of argumentation. Exercises in oral communication in adversarial situations.

3243 Persuasion
(3-0) 3 hours credit. Prerequisite: Enrollment as a Communication major.
Theory and practice of influencing attitudes, beliefs, opinions, and actions. Emphasis on critical evaluation of persuasive messages and design of persuasive campaigns.

3253 Rhetorical Communication Analysis
(3-0) 3 hours credit. Prerequisite: Enrollment as a Communication major.
Study of classical and contemporary rhetorical theory. Critical evaluation of communication messages and techniques of delivery.

3383 Interpersonal Communication
(3-0) 3 hours credit. Prerequisite: COM 1053 or COM 3023.
Theory and research of communication in personal and professional settings. The course stresses the social context of communication and emphasizes skills, knowledge, and motivation of verbal and nonverbal interaction. (Same as MGT 3253. Credit cannot be earned for both COM 3383 and MGT 3253.)

3413 Writing for New Media
(3-0) 3 hours credit. Prerequisites: COM 3023, ENG 2413, and enrollment as a Communication major.
Introduction to issues and practices in the design of online information. Emphasis on writing and design practices in the context of various online information genres, including writing for the World Wide Web. Other topics may include hypertext theory and interactive design.

3523 Public Relations
(3-0) 3 hours credit. Prerequisites: COM 3023, and enrollment as a Communication Major.
Introduction to principles and practices of public relations. Some attention to public relations within multicultural communities.

3533 Writing for Public Relations
(3-0) 3 hours credit. Prerequisites: COM 3523 and ENG 2413.
Exposure to techniques and skills associated with writing for public relations to create internal and external documents, such as news releases, reports, newsletters, feature stories, and brochures. Designed to enable students to become competent and versatile writers for a variety of publics. (Formerly COM 3513. Credit cannot be earned for both COM 3513 and COM 3533.)

3553 Intercultural Communication
(3-0) 3 hours credit. Prerequisites: COM 3023, and completion of or concurrent enrollment in COM 3083.
Examination of differences in communication that arise from cultural and/or ethnic diversity. Emphasis on the verbal and nonverbal communicative patterns, conflict management, and decision-making processes of diverse cultures.

3563 International Communication
(3-0) 3 hours credit. Prerequisites: COM 3023, and completion of or concurrent enrollment in COM 3083.
Examination of issues, conditions, and processes relating to world media systems. Consideration of theoretical and practical perspectives in key domains of interaction such as political economy, social development, and technology.

3623 Commercial Publications
(3-0) 3 hours credit. Prerequisites: COM 3023, ENG 2413, and enrollment as a Communication major.
Theory and practice of commercial writing and desktop publishing. Includes discussion of document design, principles of layout, and typography.

3633 Professional Presentation
(3-0) 3 hours credit. Prerequisite: COM 1043, COM 1053, or COM 2113.
Fundamentals of professional presentations including information exchange, problem solving, and persuasive proposals. Emphasis on the integration of oral presentation with written, graphic, and other media materials.

3883 Small Group Communication
(3-0) 3 hours credit. Prerequisite: Enrollment as a Communication major.
Theory and research in the communication processes of small groups. Emphasis on analysis of transactions in social and task-oriented groups.

3893 Organizational Communication
(3-0) 3 hours credit. Prerequisite: COM 1053 or COM 3023.
Theory and research in organizational communication. Examination of the barriers to effective organizational communication; group communication and decision making; information flows through the formal and informal networks of organizations, and the means of evaluating organizational communication effectiveness. (Same as MGT 3123. Credit cannot be earned for both COM 3893 and MGT 3123.)

4383 Relational Communication
(3-0) 3 hours credit. Prerequisites: COM 3383, and enrollment as a Communication major.
Examination of the transactional processes involved in the creation, maintenance, and termination of personal relationships. Analysis of current research and theories concerning the role and effects of communicating in friendship, marriage, and family relationships.

4413 Topics in Communication
(3-0) 3 hours credit. Prerequisite: Enrollment as a Communication major.
Intensive study of one or more specific issues in communication (e.g., contexts, theoretical perspectives, and/or research methods). May be repeated once for credit when topics vary.

4523 Case Studies in Public Relations
(3-0) 3 hours credit. Prerequisites: COM 3073, COM 3523, and COM 3533.
Advanced study of public relations functions, principles, and practices using local, regional, and national organizations as examples.

4533 Public Relations Planning and Campaigns
(3-0) 3 hours credit. Prerequisites: COM 3623 and COM 4523.
Application of public relations principles to the planning and production of messages and campaigns. Students will be expected to produce and carry out a public relations campaign within the community. This course fulfills the College of Liberal and Fine Arts Signature Experience.

4723 Digital Media Production
(3-0) 3 hours credit. Prerequisites: COM 2433, COM 3413, and COM 3623 or consent of instructor.
Theory and application of digital production formats, such as Web animation, digital photo production or digital film. May be repeated once for credit when topics vary. This course fulfills the College of Liberal and Fine Arts Signature Experience.

4813 Theory and Practice of Social Interaction
(3-0) 3 hours credit. Prerequisites: Enrollment as a Communication major and senior standing.
Advanced study of one or more specific topics in social interaction, such as relational communication, intergroup communication, family communication, health communication, and/or conflict. This course fulfills the College of Liberal and Fine Arts Signature Experience.

4911-3 Independent Study in Communication
1 to 3 hours credit. Prerequisite: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933 Internship in Communication
3 hours credit. Prerequisites: Enrollment as a Communication major, senior standing, and consent of instructor.
Supervised field experience in Communication. May be repeated once for credit, but only 3 semester credit hours may be counted toward major requirements. This course fulfills the College of Liberal and Fine Arts Signature Experience.

4993 Honors Thesis
3 hours credit. Prerequisite: Enrollment limited to candidates for graduation with University Honors.
Supervised research and preparation of an honors thesis. May be repeated once with advisor approval.

Comparative Studies in the Humanities (CSH)

Department of Modern Languages and Literatures, College of Liberal and Fine Arts

1103 Literary Masterpieces of Western Culture I
(3-0) 3 hours credit.
Representative masterworks of Western literature in translation. An examination of major texts from antiquity to the Renaissance that have shaped and expressed Western cultural traditions. Situation of literary works in the context of the development of civilization.

1113 Literary Masterpieces of Western Culture II
(3-0) 3 hours credit.
Representative masterworks of Western literature in translation. An examination of major texts from the Renaissance to the present that have shaped and expressed Western cultural traditions. Situation of literary works in the context of the development of civilization.

1203 Introduction to Hispanic Cultures
(3-0) 3 hours credit.
An overview of the cultures of Spain, Spanish America, and Hispanic groups in the United States as revealed through their literatures and other forms of expression. Exploration of the unifying and diversifying elements in Hispanic civilization from its beginnings. All readings from English language or translated materials. May not be used as support work for the Spanish major.

1213 Topics in World Cultures [TCCN: HUMA 2323.]
(3-0) 3 hours credit.
Introductory overview of a specific culture or cultural area as revealed through the diversity of its heritage. Includes topics such as Hispanic, Francophone, German, Slavic, Judaic, Latin, Oriental, or African culture. All readings are from English language or translated materials. May be repeated for credit when topics vary.

2113 The Foreign Film
(3-0) 3 hours credit.
An introduction to film as art and cultural expression. Emphasis on cinematic techniques, national traditions, genres, and the distinctive features of film as a humanistic medium. Films drawn from Latin America, Asia, Africa, and/or Europe. May be repeated for credit when topics vary.

2313 Introduction to Literary Studies
(3-0) 3 hours credit. Prerequisite: WRC 1023 or the equivalent.
Offers the opportunity to develop an awareness of literature and the skills with which to approach and understand it. Examination of individual national traditions and the interrelationship of all literary traditions. Emphasis on the nature of genre, period, and style. (Formerly CSH 3313. Credit cannot be earned for both CSH 2313 and CSH 3313.)

3023 Studies in Comparative Literature
(3-0) 3 hours credit. Prerequisite: WRC 1023 or the equivalent.
Comparative investigation of foreign literature. Topics may include study of a genre, period, or motif, or comparison of authors across different languages. All readings are in English translation. May be repeated for credit when topics vary.

3823 Advanced Topics in World Cultures
(3-0) 3 hours credit. Prerequisite: WRC 1023 or the equivalent.
Comparative investigation of foreign cultures. Topics may include various combinations and aspects of Hispanic, Francophone, German, Slavic, Judaic, Latin or Oriental cultures. All readings are in English translation. May be repeated for credit when topics vary.

Computer Science (CS)

Department of Computer Science, College of Sciences

NOTE: All prerequisites for Computer Science (CS) courses must be completed with a grade of "C–" or better.

1023 Cultural Implications of the Information Society [TCCN: COSC 1300.]
(3-0) 3 hours credit.
This course offers an examination of the modern information society and the influences of technological advances on society and culture. The emphasis is on information and its management from ethical, social, and legal perspectives. Students will make extensive use of the World Wide Web. May be applied toward the core curriculum requirement in World Society and Issues.

1033 Microcomputer Applications
(3-0) 3 hours credit.
Study of the uses of the computer and the organization and visualization of data. Topics will be selected from library searching, networking, e-mail, spreadsheets, databases, authoring packages, multimedia and hypertext applications, presentation graphics, and legal/ethical issues. May not be applied toward a major in computer science. (Formerly CS 2083. Credit cannot be earned for both CS 1033 and CS 2083.)

1053 Professional Computer Certification
(3-0) 3 hours credit. Prerequisite: Permission in writing (form available) from the instructor and the Department Chair.
This course is designed to allow students the opportunity to obtain a professional certification in one of several possible computer certification programs. Credit is awarded based on successfully obtaining the certification. Certifications allowed include Microsoft® and CISCO professional certifications, but others may be allowed at the discretion of the instructor and Department Chair. May be repeated for credit when certifications vary. May not be applied toward a major in computer science.

1063 Introduction to Computer Programming I [TCCN: COSC 1336.]
(3-0) 3 hours credit. Prerequisite: MAT 1073 or the equivalent.
An introduction to computer programming using a modern object-oriented computer language. Topics include assignment, decisions, loops, methods and arrays using objects.

1073 Introductory Computer Programming for Scientific Applications
(3-0) 3 hours credit. Prerequisite: MAT 1073 or the equivalent.
Introductory programming. Data representation, problem-solving methods, algorithm development and implementation, arrays and list structures, searching and sorting. May not be applied toward a major in computer science.

1143 Web Design
(3-0) 3 hours credit. Prerequisite: Computer literacy.
Introduction to the process of planning, designing, and building a Web site. Concepts required to design and build interactive Web sites, including page design using XHTML, tables, CSS, and JavaScript. Design tools will be used to design and maintain Web sites.

1153 Game Programming
(3-0) 3 hours credit. Prerequisite: Computer literacy.
Introduction to game design and programming. Common practices used in the video game industry today will also be introduced. Students will learn the basics of creating a PC game through lecture material, hands-on laboratories, and a final project in which the students will build a simple game.

1173 Data Analysis and Visualization using MATLAB
(3-0) 3 hours credit. Prerequisite: MAT 1023.
Introduction to computation for data analysis and visualization using MATLAB. Programming concepts including functions, scripting, loops and logic, handling of vectors and structured data are explored in the context of working with and plotting real data. (Formerly titled "Computation for Scientists and Engineers.")

1711 Introduction to Computer Programming II Recitation [TCCN: COSC 1437.]
(1-0) 1 hour credit. Prerequisite: CS 1063. Concurrent enrollment in CS 1713 is required.
Recitation to accompany CS 1713. (Formerly titled "Introduction to Computer Science Recitation.")

1713 Introduction to Computer Programming II [TCCN: COSC 1437.]
(3-0) 3 hours credit. Prerequisite: CS 1063. Concurrent enrollment in CS 1711 is required.
Extended programming concepts including multi-dimensional arrays, pointers, dynamic memory allocation/deallocation and recursion. Problem solving methods, algorithm development and implementation. (Formerly titled "Introduction to Computer Science.")

2073 Computer Programming with Engineering Applications
(3-0) 3 hours credit. Prerequisites: MAT 1214 and completion of or concurrent enrollment in MAT 1224.
Algorithmic approaches to problem solving and computer program design for engineers. Engineering and mathematically-oriented problem sets will be emphasized, including nonnumeric applications. Searching, sorting, linked lists, and data typing will be introduced. May not be applied toward a major in computer science.

2121 Data Structures Recitation [TCCN: COSC 2436.]
(1-0) 1 hour credit. Prerequisites: CS 1711 and CS 1713. Concurrent enrollment in CS 2123 is required.
Recitation to accompany CS 2123. (Formerly CS 1721. Credit cannot be earned for both CS 2121 and CS 1721.)

2123 Data Structures [TCCN: COSC 2436.]
(3-0) 3 hours credit. Prerequisites: CS 1711 and CS 1713. Concurrent enrollment in CS 2121 is required.
Abstract data structures (stacks, queues, lists, trees), recursion, sorting, and searching. Implementation of data structures using explicit memory management, and introduction to abstract data type design and encapsulation. (Formerly CS 1723. Credit cannot be earned for both CS 2123 and CS 1723.)

2153 Game Design
(3-0) 3 hours credit. Prerequisites: CS 1153.
This course builds upon the lessons learned in CS 1153 Game Programming to examine in more detail the design and development of electronic games. The fundamentals of game design and development of electronic games. The fundamentals of game design will be examined in detail and the students will be responsible for building a game using a popular game engine.

2211 Advanced Programming Recitation
(1-0) 1 hour credit. Prerequisites: CS 2121 and CS 2123. Concurrent enrollment in CS 2213 is required.
Recitation to accompany CS 2213.

2213 Advanced Programming
(3-0) 3 hours credit. Prerequisites: CS 2121 and CS 2123. Concurrent enrollment in CS 2211 is required.
An implementation level view of data structures in a specific language with an emphasis on pointers and memory management. Dynamic data structures such as dynamic lists, heaps, 23-trees, graphs, etc. are considered.

2231 Discrete Mathematical Structures Recitation
(1-0) 1 hour credit. Prerequisites: CS 1711, CS 1713, and MAT 1214. Concurrent enrollment in CS 2233 is required.
Recitation to accompany CS 2233. (Formerly CS 3231. Credit cannot be earned for both CS 2231 and CS 3231.)

2233 Discrete Mathematical Structures
(3-0) 3 hours credit. Prerequisites: CS 1711, CS 1713, and MAT 1214. Concurrent enrollment in CS 2231 is required.
Survey and development of theoretical tools suitable for describing algorithmic applications. Propositional and predicate calculus, proofs, induction, order notation, recurrences and discrete structures. (Formerly 3233. Credit cannot be earned for both CS 2233 and CS 3233.)

3323 Topics in Programming Languages
(3-0) 3 hours credit. Prerequisites: CS 3421 and CS 3423.
Study of two or three languages important to the computer science curriculum.

3331 Mathematical Foundations of Computer Science Recitation
(1-0) 1 hour credit. Prerequisites: CS 1711, CS 1713, and MAT 1224. Concurrent enrollment in CS 3333 is required.
Recitation to accompany CS 3333.

3333 Mathematical Foundations of Computer Science
(3-0) 3 hours credit. Prerequisites: CS 1711, CS 1713, and MAT 1224. Concurrent enrollment in CS 3331 is required.
Survey and development of mathematical and statistical tools suitable for describing algorithmic applications. Vectors, matrices, combinatorics, probability and statistical models.

3341 Analysis of Algorithms Recitation
(1-0) 1 hour credit. Prerequisites: CS 2121, CS 2123, CS 2231, CS 2233, CS 3331, and CS 3333. Concurrent enrollment in CS 3343 is required.
Recitation to accompany CS 3343.

3343 Analysis of Algorithms
(3-0) 3 hours credit. Prerequisites: CS 2121, CS 2123, CS 2231, CS 2233, CS 3331, and CS 3333. Concurrent enrollment in CS 3341 is required.
Analysis of the performance of algorithms; discussion of programming techniques and data structures used in the writing of effective algorithms.

3393 Numerical Linear Algebra
(3-0) 3 hours credit. Prerequisites: CS 1073, or CS 1711 and CS 1713, or CS 2073; and CS 3331 and CS 3333, or MAT 2233.
A study of the numerical techniques involved in matrix operations, systems of linear equations, linear least squares, eigenvalue and singular value problems, with an emphasis on practical implementations using existing mathematical software.

3413 Data Communications
(3-0) 3 hours credit. Prerequisites: CS 3841 and CS 3843 or consent of instructor.
Concepts, principles, and terminology concerning the standards, equipment, interfaces, protocols, architectures, transmission alternatives, and regulatory issues involved in the design and use of data communications systems.

3421 Systems Programming Recitation
(1-0) 1 hour credit. Prerequisites: CS 2121 and CS 2123. Concurrent enrollment in CS 3423 is required.
Recitation to accompany CS 3423. (Formerly CS 2411. Credit cannot be earned for both CS 3421 and CS 2411.)

3423 Systems Programming
(3-0) 3 hours credit. Prerequisites: CS 2121 and CS 2123. Concurrent enrollment in CS 3421 is required.
A study of systems-level programming in a specific system (at present, Unix). Focus on concepts and tools to support the construction of systems programs. (Formerly CS 2413. Credit cannot be earned for both CS 3423 and CS 2413.)

3433 Principles of Computer and Information Security
(3-0) 3 hours credit. Prerequisites: CS 3421 and CS 3423.
An introduction to the protection of computer systems and networks. Topics will include authentication, access controls, malicious software, formal security methods, firewalls, intrusion detection, cryptography and information hiding, risk management, computer forensics, and ethics.

3443 Application Programming
(3-0) 3 hours credit. Prerequisites: CS 2121 and CS 2123.
Advanced application development in a current object-oriented language. Introduction to the software life cycle, best programming practices, and modern development tools.

3713 C++ Programming
(3-0) 3 hours credit. Prerequisites: CS 2073, or CS 2121 and CS 2123.
An introduction to standard C++ and key programming and design techniques supported by C++. Topics include C++ types and expressions, class abstractions, name spaces, exception handling, operator overloading, templates, and the standard template library.

3721 Programming Languages Recitation
(1-0) 1 hour credit. Prerequisites: CS 2231, CS 2233, and CS 3443. Concurrent enrollment in CS 3723 is required.
Recitation to accompany CS 3723.

3723 Programming Languages
(3-0) 3 hours credit. Prerequisites: CS 2231, CS 2233, and CS 3443. Concurrent enrollment in CS 3721 is required.
An introduction to high-level procedural, functional, and object-oriented programming languages, their theoretical foundations, organization, and implementation. Topics include formal syntax, compilers and interpreters, type systems, scoping and activation records, control structures, and data abstraction.

3731 Operating Systems Recitation
(1-0) 1 hour credit. Prerequisites: CS 3421, CS 3423, CS 3443, CS 3841, and CS 3843. Concurrent enrollment in CS 3733 is required.
Recitation to accompany CS 3733.

3733 Operating Systems
(3-0) 3 hours credit. Prerequisites: CS 3421, CS 3423, CS 3443, CS 3841, and CS 3843. Concurrent enrollment in CS 3731 is required.
An introduction to the functions and major techniques of a modern multiprogramming operating system. Includes exposure to the fundamentals of processor management, process synchronization, memory management, and peripheral management.

3743 Introduction to Database Systems
(3-0) 3 hours credit. Prerequisites: CS 2231, CS 2233, CS 3421, and CS 3423.
Study of fundamentals of database systems. Topics include basic concepts, various data models, database design, storage systems, indexing and hashing, database application design and implementation, and commercially available database systems.

3773 Software Engineering
(3-0) 3 hours credit. Prerequisite: CS 3443.
Introduction to different aspects of software engineering with the concentration on processes, methods, and tools for developing reliable software-centered systems. Study of software development process models, project management, a variety of modeling notations, requirement analysis, architecture design methods, and testing techniques.

3793 Introduction to Artificial Intelligence
(3-0) 3 hours credit. Prerequisites: CS 3341 and CS 3343.
Discussion of theorem-proving by machine; includes computational linguistics, psychological modeling, and computer games.

3841 Computer Organization Recitation
(1-0) 1 hour credit. Prerequisites: CS 2121 and CS 2123. Concurrent enrollment in CS 3843 is required.
Recitation to accompany CS 3843. (Formerly CS 2731. Credit cannot be earned for both CS 3841 and CS 2731.)

3843 Computer Organization
(3-0) 3 hours credit. Prerequisites: CS 2121 and CS 2123. Concurrent enrollment in CS 3841 is required.
Organization of a computer system is introduced at block diagram level. Programming in assembly language and understanding the macroarchitecture of a computer is emphasized. Fundamentals of digital systems are introduced and the designs of various components used are investigated. (Formerly CS 2733. Credit cannot be earned for both CS 3843 and CS 2733.)

3851 Computer Architecture Recitation
(1-0) 1 hour credit. Prerequisites: CS 3421, CS 3423, CS 3841, and CS 3843. Concurrent enrollment in CS 3853 is required.
Recitation to accompany CS 3853. (Formerly CS 4751. Credit cannot be earned for both CS 3851 and CS 4751.)

3853 Computer Architecture
(3-0) 3 hours credit. Prerequisites: CS 3421, CS 3423, CS 3841, and CS 3843. Concurrent enrollment in CS 3851 is required.
Instruction set architecture, datapath and control unit design, advanced computer arithmetic, pipelining, memory hierarchy and I/O subsystem, performance issues. (Formerly CS 4753. Credit cannot be earned for both CS 3853 and CS 4753.)

3873 Computer Networks
(3-0) 3 hours credit. Prerequisites: CS 3841 and CS 3843.
Network architecture, TCP/IP protocol suite, routing, data-link layer protocols, medium access control protocols, error detection and recovery, local area networks, wireless and mobile networks. (Formerly CS 4873. Credit cannot be earned for both CS 3873 and CS 4873.)

4213 Computing for Bioinformatics
(3-0) 3 hours credit. Prerequisite: CS 1173 or another programming course.
Emphasizes computing tasks common in bioinformatics: variables, flow control, input/output, strings, pattern matching, arrays, hash tables, functions, access to databases, and parsing data from queries for common bioinformatics tasks. SQL, XML, and BioPerl. May not be applied to the 24 hours of required electives for computer science majors, but may be included for a computer science minor.

4313 Automata, Computability, and Formal Languages
(3-0) 3 hours credit. Prerequisites: CS 3341 and CS 3343.
Discussion of abstract machines (finite state automata, pushdown automata, and Turing machines), formal grammars (regular, context-free, and type 0), and the relationship among them.

4353 Unix and Network Security
(3-0) 3 hours credit. Prerequisite: CS 3433.
A technical survey of the fundamentals of computer and information security. Issues include cryptography, authentication, attack techniques at both the OS and network level, defense techniques, intrusion detection, scan techniques and detection, forensics, denial of service techniques and defenses, libpcap, libdnet and libnet programming.

4363 Cryptography
(3-0) 3 hours credit. Prerequisites: CS 3341, CS 3343, and CS 3433.
A course in pure and applied cryptography, with emphasis on theory. Topics may include conventional and public-key cryptosystems, signatures, pseudo-random sequences, hash functions, key management, and threshold schemes.

4383 Computer Graphics
(3-0) 3 hours credit. Prerequisites: CS 2121, CS 2123, CS 3341, and CS 3343.
An introduction to two- and three-dimensional generative computer graphics. Display devices, data structures, mathematical transformations, and algorithms used in picture generation, manipulation, and display.

4393 User Interfaces
(3-0) 3 hours credit. Prerequisite: CS 3443.
Study of advanced user interface issues. User interface design, human factors, usability, GUI programming models, and the psychological aspects of human-computer interaction.

4413 Web Technologies
(3-0) 3 hours credit. Prerequisites: CS 3421 and CS 3423.
Fundamentals of Web and component technology: markup languages, layout design, client and server side programming, database and Web integration.

4593 Topics in Computer Science
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Advanced topics in an area of computer science. May be repeated for credit when topics vary.

4633 Simulation
(3-0) 3 hours credit. Prerequisites: CS 3341 and CS 3343.
Design, execution, and analysis of simulation models, discrete event simulation techniques, input and output analysis, random numbers, and simulation tools and languages.

4713 Compiler Construction
(3-0) 3 hours credit. Prerequisites: CS 3341, CS 3343, CS 3841, and CS 3843.
An introduction to implementation of translators. Topics include formal grammars, scanners, parsing techniques, syntax-directed translation, symbol table management, code generation, and code optimization. (Formerly titled "Compiler Writing.")

4723 Software Validation and Quality Assurance
(3-0) 3 hours credit. Prerequisite: CS 3443.
Study of software validation techniques. Introduction to static analysis and software testing approaches (functional testing, structural testing, integration testing and regression testing). Overview of test planning and test case design. Review of topics in quality assurance.

4733 Project Management
(3-0) 3 hours credit. Prerequisite: CS 3443.
Introduction to principles and best practices for software project management. Topics include software process models, capability maturity model, metrics, cost estimation, software project planning, risk management, software configuration management, people management, and software management CASE tools.

4763 Multimedia Systems
(3-0) 3 hours credit. Prerequisites: CS 3731 and CS 3733.
Multimedia hardware capabilities. Sound and video generation and editing. Multimedia applications development and toolkits. Analysis of operational characteristics of multimedia systems.

4773 Object-Oriented Systems
(3-0) 3 hours credit. Prerequisite: CS 3443.
An introduction of principles and methodologies of good software design. Study of object-oriented concepts and techniques, encapsulation, inheritance mechanisms, polymorphism, and programming in one or more object-oriented languages. Examination of design patterns that provide reusable solutions to problems in object-oriented design.

4793 Introduction to Artificial Neural Networks
(3-0) 3 hours credit. Prerequisites: CS 3341 and CS 3343.
Analysis of biological nervous systems, supervised and unsupervised training algorithms, perceptrons and threshold logic-based systems, associative memories, nonlinear regression, and backpropagation learning methods.

4823 Introduction to Parallel Programming
(3-0) 3 hours credit. Prerequisites: CS 3341, CS 3343, CS 3421, and CS 3423.
Parallel programming concepts (partitioning, synchronization and communication, programming models-shared memory based and message based), programming tools and languages, performance issues.

4833 Embedded Systems
(3-0) 3 hours credit. Prerequisites: CS 3341, CS 3343, CS 3731, CS 3733, CS 3851, and CS 3853.
Concepts and design principles of embedded systems. Microprocessor and hardware architecture, sensors and actuators, basic feedback control theory. Real-time scheduling, programming in embedded systems.

4913 Independent Study
3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4933 Internship in Computer Science
3 hours credit. Prerequisites: Junior or senior standing, an overall 2.5 grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Sciences.
The opportunity for a semester-long work experience in a private business or public agency in a computer science-related position. Not more than 3 semester credit hours of CS 4933, and not more than a total of 6 semester credit hours of CS 4933 and independent study courses may count toward the Bachelor of Science degree in Computer Science. The grade report for this course is either "CR" (satisfactory participation in the internship) or "NC" (unsatisfactory participation in the internship).

4953 Special Studies in Computer Science
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Research
3 hours credit. Prerequisites: Enrollment limited to candidates for College Honors during their last two semesters; approval by the College Honors Committee.
Supervised research and preparation of an honors thesis. May be repeated once with approval.

Construction Science and Management (CSM)
College of Architecture

2323 Construction Documents
(3-0) 3 hours credit. Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor.
Introduction to construction documents and applicable software for use in communicating building design intentions to field personnel, including an understanding of how to interpret, explain, quantify and use construction documents to bid, construct and manage construction projects. (Formerly ARC 4313. Credit cannot be earned for both CSM 2323 and ARC 4313.)

2333 Construction Culture and History
(3-0) 3 hours credit.
History of construction and building technologies in Western and non-Western cultures. Emphasis on work traditions, graphical illustrations, social and political concerns.

3011 Construction Industry Contemporary Issues
(1-0) 1 hour credit. Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor.
Exploration of various professional options and specialties across the construction industry, professional ethics and introduction to professional societies. Must be taken on a credit/no-credit basis.

3111 Construction Surveying
(0-3) 1 hour credit. Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor.
Practical applications of surveying, including distance, grade and angular measurements, surveying equipment and its application to construction layout and control, surveying documentation and field work.

3621 Construction Safety I
(1-0) 1 hour credit. Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor.
Introduction to safety and safety programs, workers' compensation, OSHA organization and structure, safety policies, standards, and record keeping. Emphasis on communication and job-site safety ethics and management.

4013 Construction Estimating I
(3-0) 3 hours credit. Prerequisite: CSM 2323.
Introduction to estimating procedures for buildings related to quantity surveying, cost of materials and labor, life-cycle costs, and applicable software. (Formerly ARC 4013. Credit cannot be earned for both CSM 4013 and ARC 4013.)

4023 Construction Estimating II
(2-3) 3 hours credit. Prerequisite: CSM 4013.
Continuation of CSM 4013 with emphasis on pricing work, subcontracting, and bidding strategies utilizing applicable software. (Formerly ARC 4023. Credit cannot be earned for both CSM 4023 and ARC 4023.)

4513 Construction Management I
(3-0) 3 hours credit. Prerequisite: CSM 2323.
Introduction to management of the construction process and integration with allied professions. Introduction to applicable software. (Formerly ARC 4613. Credit cannot be earned for both CSM 4513 and ARC 4613.)

4523 Construction Management II
(2-3) 3 hours credit. Prerequisite: CSM 4513.
Continuation of CSM 4513 with emphasis on scheduling and project delivery methods utilizing applicable software. (Formerly ARC 4623. Credit cannot be earned for both CSM 4523 and ARC 4623.)

4533 Building Information Modeling for Construction Management
(2-3) 3 hours credit. Prerequisite: CSM 4523.
Introduction to techniques used in development and management of Building Information Models. Emphasis on constructability and management.

4613 Sustainable Building Practice
(3-0) 3 hours credit. Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor.
Ethics and application of environmental sustainability practice in building construction. Introduction to U.S. Green Building Council LEED program standards, methods, and procedures as applied to construction documents interpretation and construction.

4623 Construction Safety II
(3-0) 3 hours credit. Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor.
Development and management of safety programs, OSHA compliance, safety policies, standards, and record keeping.

4633 Construction Law
(3-0) 3 hours credit. Prerequisite: Enrollment as a Construction Science and Management major or permission of instructor.
Legal and ethical aspects of construction contracts, bonds, insurance, and bidding. Owner, architect, contractor, and subcontractor relationships.

4643 Mechanical, Electrical and Plumbing Systems
(3-0) 3 hours credit. Prerequisite: CSM 2323 or permission of instructor.
Building systems with an emphasis on design, installation and control of heating, ventilation and cooling, plumbing and drainage, electrical, fire and lightning protection systems.

4713 Construction Capstone
(2-3) 3 hours credit. Prerequisites: CSM 4023 and CSM 4523.
Senior capstone project emphasizing integration of the design and construction processes. Project delivery systems, project development, estimating, scheduling and project controls of various types of construction projects.

4911,3,6 Independent Study
1, 3, or 6 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Scholarly research under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, may apply to a bachelor's degree.

4931 Summer Internship
1 hour credit. Prerequisites: CSM 2323, CSM 3011, CSM 3111, and CSM 3621.
This is a full-time, on-site, construction work experience. Supervision by qualified construction manager and intern mentor to prepare the intern for building construction management functions. Instructor prior approval of details for individual work experience required. Must be repeated for credit and taken in consecutive five-week summer sessions.

4932 Internship
2 hours credit. Prerequisites: CSM 2323, CSM 3011, CSM 3111, and CSM 3621.
This is a part-time, on-site, construction work experience. Supervision by qualified construction manager and intern mentor to prepare the intern for building construction management functions. Instructor prior approval of details for individual work experience required.

4951,3,6 Special Studies in Construction Science and Management
(0-3, 0-6, 0-12) 1, 3 or 6 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 3 hours for CSM 4951, 6 hours for CSM 4953, or 12 hours for CSM 4956, regardless of discipline, will apply to a bachelor's degree.

Core (COR)

Office of Undergraduate Studies

1203 Freshman Seminar
(3-0) 3 hours credit.
An organized course focusing on a topic in the social and behavioral sciences. Topics will vary, but may include Society and the Arts, Society and Business, Society and Communications, Society and Culture, Society and Education, Society and Health, Society and the Law, Society and Politics, Society and Science, Society and Self, and Society and Technology. No more than 3 semester hours of COR courses may be taken to satisfy the Core Curriculum requirement in Social and Behavioral Science.

Counseling (COU)

Department of Counseling, College of Education and Human Development

2103 Personal Career Planning and Occupational Exploration
(3-0) 3 hours credit.
Exploration of career/life planning as a process with a focus on issues and obstacles that can impact an individual's career choices. Knowledge of career development theories and decision-making models, current national and state-specific labor market trends, career and occupational resources will be presented. Course will include opportunities for self-assessment and career assessment results, including interest, personality, values clarification inventories and skills identification as they relate to occupational choices. Recommended for undecided/undeclared majors.

3103 Helping Skills
(3-0) 3 hours credit.
This course is designed to create an understanding of the helping relationship. Basic communication/counseling techniques (such as active listening, responding, and interviewing) for facilitating helping relationship skills are developed.

Criminal Justice (CRJ)

Department of Criminal Justice, College of Public Policy

1113 The American Criminal Justice System [TCCN: CRIJ 1301.]
(3-0) 3 hours credit.
Philosophy and history of criminal justice in America; examination of criminal justice agencies operating as an interacting system: police and security agencies, courts, and corrections.

2153 Nature of Crime and Justice
(3-0) 3 hours credit.
A multidisciplinary survey of theories of crime causation and social control. Major topics covered include: theory construction, theory-methods, symmetry, evaluating theory, theoretical integration, and applied criminology.

2213 Introduction to Policing [TCCN: CRIJ 2328.]
(3-0) 3 hours credit.
An introduction to American policing organizations (public and private), history of policing, modern community policing practices, and important trends in law enforcement.

2513 Introduction to Corrections [TCCN: CRIJ 2313.]
(3-0) 3 hours credit.
A study of the history, philosophy, and practice of corrections in America. Theories and practices of incarceration; legal and administrative issues surrounding imprisonment and the death penalty. (Formerly titled "Corrections: Theory and Practice.")

2813 Introduction to Courts and the Legal System [TCCN: CRIJ 1306.]
(3-0) 3 hours credit.
Examines state and federal American court systems, their powers, remedies, limitations, and procedures; and the contributions of courts to governance.

3013 Research Design and Analysis in Criminal Justice
(3-0) 3 hours credit. Prerequisite: Completion of 3 hours of college-level mathematics or statistics.
Provides students with an opportunity to be knowledgeable consumers of criminal justice research. Provides an overview of principles of scientific inquiry, research designs, and statistical concepts and techniques. Introduction to interpretation of data analysis and preparation of research reports.

3213 Managing Criminal Justice Organizations
(3-0) 3 hours credit.
Examines bureaucratic, political and other characteristics of justice organizations through a review of theories of public administration and organizational behavior. Applies theories to problems and policies encountered in managing criminal justice agencies.

3233 Introduction to Forensic Science
(3-0) 3 hours credit. Enrollment limited to upper-division criminal justice majors.
This course will expose students to the nature of physical evidence and its part in our criminal justice system, an introduction to basic scientific and legal principles involved with the utilization of physical evidence, and exposure to specific items of physical evidence to include their components, manufacture, methods of analysis, and value in case work.

3533 Probation, Parole and Intermediate Sanctions
(3-0) 3 hours credit.
History, philosophy, and practice of community supervision of offenders. Examination of various intermediate punishments including boot camps, intensive probation supervision, electronic monitoring, restitution, and community service.

3563 Juvenile Justice
(3-0) 3 hours credit.
Examination of the history of adolescence and the development of the juvenile justice system. An in-depth study of police, courts and corrections as applied to youth. Consideration of youth as both offenders and victims. Topics include child abuse, youth gangs, waiver/transfer of youth to the adult court and juvenile offending.

3573 Restorative Justice
(3-0) 3 hours credit.
Provides students with a detailed study of the principles and practices of restorative justice aimed at creating a just peace within a community, a just public order for the community, vindication for victims and opportunities for accountability and restoration to offenders.

3613 Legal Research and Writing
(3-0) 3 hours credit.
Detailed study of theory and practice of legal research. Development and refinement of legal writing techniques. (Same as LGS 3013. Credit cannot be earned for both CRJ 3613 and LGS 3013.)

3623 Substantive Criminal Law
(3-0) 3 hours credit.
Jurisprudential philosophy and case study of common law and statutory crimes. Includes functions and development of substantive criminal law, elements of specific offenses, and defenses.

3633 Trial and Evidence
(3-0) 3 hours credit.
Issues and problems of proof in civil and criminal trials, admissibility, examining witnesses, constitutional considerations, and exclusionary rules.

3713 Ethics in Criminal Justice Practice
(3-0) 3 hours credit.
Survey of major schools of ethics theory; sources of ethical and philosophical foundations for criminal justice functions; common quandaries confronting officers, supervisors, and executives in justice organizations. Examines the role of criminal justice within modern civil societies.

4113 Intimate and Family Violence
(3-0) 3 hours credit.
Historical, social, and legal responses and policies of domestic violence, intimate partner violence, and child abuse. Characteristics of victims and perpetrators of violence, and the progression and cycle of violence are examined. In-depth study of the process of violent victimization and victimizing.

4123 Investigations
(3-0) 3 hours credit.
Examination of the investigative process. Focus on the history, structure, and success rates of investigation units, theories of investigation, and the information that is used to produce case clearances. (Formerly titled "Concepts of Investigations.")

4143 Legal Issues in Forensic Science
(3-0) 3 hours credit.
Examination of statutory and case law governing the admissibility of scientific evidence at trial, focusing on the constitutional, statutory, and administrative regulations and restrictions on the collection, analysis, and usage of forensic evidence; study of the roles and responsibilities of expert witnesses.

4303 Victimology
(3-0) 3 hours credit.
This course will familiarize students with victimology concepts, theories, and literature as a field of study within criminology. Topics may include nature and incidence of victimization, victim and offender relationships, victim justice, victim rights and services. Consideration may be given to responses to victims with special needs and crime prevention strategies. (Formerly titled "Victims and the Justice System.")

4403 Race, Ethnicity, and Criminal Justice
(3-0) 3 hours credit.
This course examines experiences of racial and ethnic groups in the criminal justice system. Topics include: the nature and extent of overrepresentation by racial and ethnic minorities as justice system clients, culture-specific crime and victimization patterns, research evidence and theoretical explanations for these patterns. (Formerly CRJ 4313. Credit cannot be earned for both CRJ 4403 and CRJ 4313.)

4413 Contemporary Police Practices
(3-0) 3 hours credit.
A survey of leading research-based law enforcement practices for crime prevention and problem solving.

4443 Special Topics in Policing and Crime Prevention
(3-0) 3 hours credit.
Considers special topics in policing and crime prevention not ordinarily evaluated in depth in other courses, such as comparative policing systems, personnel issues, police civil and criminal liabilities, job satisfaction and stress, diversity issues, ethics, police use of force, and future of policing. May be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4453 Drugs and Crime
(3-0) 3 hours credit.
An overview of the scope and role of drugs in society and the relationship between illicit substances and crime. Leading theories of drug use and enforcement will be surveyed. Major topics include: the social construction of drug issues, the war on drugs, drug control policy, and the function of drugs in popular cultural mediums. Contemporary topics to be examined include: asset forfeiture, the confidential informant role in drug enforcement, drug ethnography, corrections-based substance abuse treatment, and drug enforcement strategies.

4463 Gender and Crime
(3-0) 3 hours credit.
This course examines gender differences in criminal offending and victimization. Topics also include traditional and gender-specific theories offered to explain female involvement in crime, the experience of female victims and offenders in the criminal justice system, and women working in the criminal justice system. (Formerly CRJ 4313. Credit cannot be earned for both CRJ 4463 and CRJ 4313.)

4523 Special Topics in Forensic Science
(3-0) 3 hours credit.
In-depth examination and analysis of issues in forensic science beyond topics covered in CRJ 3233 Introduction to Forensic Science. May be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4563 Special Topics in Juvenile Justice
(3-0) 3 hours credit.
Considers special and contemporary topics in juvenile justice not ordinarily considered in other courses. May be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4613 Supervising the Correctional Client
(3-0) 3 hours credit.
Examines the components of effective supervision of correctional clients, including risk and needs assessment. Provides skills for successful face-to-face encounters with correctional clients. Study of service delivery programs tailored to the specific needs of the correctional clients.

4633 Constitutional Criminal Procedure
(3-0) 3 hours credit.
A procedurally oriented discussion of criminal law, including law of arrest, search and seizure, preliminary examination, bail, the grand jury, indictment and information, arraignment, trial, and review.

4653 White Collar Crime
(3-0) 3 hours credit.
Study of the theory, nature, scope, and impact of occupational, political, and organizational/corporate crime. Comparison of white collar crime to street crime. Examination of the structural foundations for these types of crimes and current and future systems for control of white collar crimes.

4663 Special Topics in Corrections
(3-0) 3 hours credit.
Considers special topics in corrections not ordinarily evaluated in depth in other courses, such as the death penalty, special correctional populations, and correctional administration. May be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. (Formerly titled "Special Topics in Corrections and Juvenile Justice.")

4833 Violent Crime
(3-0) 3 hours credit.
Examination of various forms of violence including homicide, robbery, assault and rape. Discussion of major theories of violent personal behavior and examination of historical and current data on violent crime. Consideration of rates of violent crime, how these rates have changed, and factors that contribute to violent crimes.

4843 Study Abroad: International Criminal Justice
(3-0) 3 hours credit. Prerequisite: Permission of instructor.
A lecture/seminar course associated with a study abroad program related to the study of cross-cultural differences in crime and applications of criminal justice systems and practice. Involves international travel and field trips. May be repeated for credit when the destination country varies.

4853 Sex Crimes and the Law
(3-0) 3 hours credit.
Examination of the nature and etiology of the major categories of sexual offending and overview of contemporary justice system responses.

4863 Special Topics in Legal Issues and Adjudication
(3-0) 3 hours credit.
Considers special topics in courts and adjudication not ordinarily evaluated in depth in other courses, such as judicial administration, specialized courts, judicial intervention and emerging areas of criminal law. May be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4913 Independent Study
3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933 Internship in Criminal Justice
3 hours credit. Prerequisites: CRJ 2153, CRJ 3213, and CRJ 3623; consent of academic advisor and Internship Coordinator.
Supervised experience in an administrative setting that provides the opportunity to integrate theory and practice in justice-related agencies. May be repeated for credit in a subsequent semester when agency setting varies, but not more than 6 semester credit hours will apply to a bachelor's degree.

4953 Special Studies in Criminal Justice
(3-0) 3 hours credit.
An organized course offering the opportunity for specialized study not normally or not often available as part of regular course offerings. May be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Thesis
3 hours credit. Prerequisites: Enrollment limited to candidates for Honors in Criminal Justice during the last two semesters; completion of honors examination and approval by the honors program coordinator.
Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval.

Curriculum and Instruction (C&I)

Department of Interdisciplinary Learning and Teaching, College of Education and Human Development

4203 Models of Teaching in the Content Areas of the Secondary School

(3-0) 3 hours credit. Prerequisites: Admission to the Teacher Certification Program, EDP 3203, and EDU 2103. Prior or concurrent enrollment in EDP 4203 is required. (Not required for music majors.)

Study of curricular, instructional, and management approaches to subject areas taught in the secondary schools. Emphasis on developing instructional and curricular strategies that are effective in teaching content areas. Course will address special population of students, application of instructional media, technology, and classroom management for the content areas. This course may be offered in multiple sections according to subject-matter emphasis. Not offered in the summer. Restricted course; advisor code required for registration. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4646 Student Teaching: Grades 8–12. This course must be completed with a grade of "C–" or better for it to serve as a prerequisite for C&I 4716 Student Teaching: All Level EC–12. Field experience required.

4213 Approaches to Teaching Music

(3-0) 3 hours credit. Prerequisites: Admission to the Teacher Certification Program, EDP 3203, and EDU 2103.

Designed to provide preservice music teachers with the necessary knowledge and skills to prepare for successfully planning, implementing, and evaluating music instruction. Field experience required.

4303 Approaches to Teaching Social Studies Incorporating Language Arts and Fine Arts EC–6

(2-2) 3 hours credit. Prerequisites: Admission to the Teacher Certification Program, C&I 4353, C&I 4403, ECE 4203, and RDG 3823. Concurrent enrollment in ECE 4143 and RDG 4833 is required. May not be taken concurrently with C&I 4353, C&I 4403, ECE 4203 or RDG 3823.

A study of methods, materials, and processes for teaching social studies incorporating the language arts and fine arts. Topics include the effective implementation of social studies curriculum, instruction, assessment and evaluation from EC–grade 6. Special emphasis is placed on integrating the various social sciences through thematic teaching. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4616 Student Teaching: Early Childhood–Grade 6. Restricted course; advisor code required for registration. Field experience required.

4353 Approaches to Teaching Science EC–6

(2-2) 3 hours credit. Prerequisites: Admission to the Teacher Certification Program, ECE 3143, ECE 3313, and ECE 3603. Concurrent enrollment in C&I 4403, ECE 4203 and RDG 3823 is required.

A study of pedagogical approaches, materials, and resources designed to support children's meaningful exploration, discovery, and construction of basic concepts and skills in EC–Grade 6. Emphasis in the course will be on the interrelatedness of science in the daily lives of students, unifying concepts and processes common to all sciences, development of effective learning environments for science both inside and outside of the classroom, planning and implementation of inquiry-based science lessons, assessment of student learning, and the use of an integrated approach to teaching. This course must be completed with a grade of "B–" or better for students to enroll in Block C courses. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4616 Student Teaching: Early Childhood–Grade 6. Restricted course; advisor code required for registration. Field experience required. (Same as BBL 4353. Credit cannot be earned for both C&I 4353 and BBL 4353.)

4403 Approaches to Teaching Mathematics EC–6

(2-2) 3 hours credit. Prerequisites: Admission to the Teacher Certification Program, ECE 3143, ECE 3313, and ECE 3603. Concurrent enrollment in C&I 4353, ECE 4203 and RDG 3823 is required.

This course involves the study of instructional methods and materials that support diverse children's meaningful exploration, discovery, and development of basic concepts and skills in mathematics from EC–Grade 6. Emphasizing a constructivist approach to the teaching and learning of mathematics, this course also advances the use of technology to facilitate mathematics understanding. Attention will be given to understanding the interrelatedness of mathematics and other content areas, creating effective learning environments, planning and implementing lesson plans to meet the differentiated needs of a wide variety of learners, and assessing student learning in mathematics. This course must be completed with a grade of "B–" or better for students to enroll in Block C courses. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4616 Student Teaching: Early Childhood–Grade 6. Restricted course; advisor code required for registration. Field experience required. (Same as BBL 4403. Credit cannot be earned for both C&I 4403 and BBL 4403.)

4433 Approaches to Teaching Science–Grades 4–8

(3-0) 3 hours credit. Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4443, C&I 4603, EDP 4203, and RDG 3533 in semester prior to student teaching.

Study of curricula, instructional, and management approaches to teaching science grades 4–8. This course emphasizes a constructivist approach in developing inductive and inquiry teaching methods. Special emphasis is placed on the integration of technology in diverse learning environments. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. Field experience required. (Formerly C&I 4413. Credit cannot be earned for more than one of the following: BBL 4433, C&I 4413, or C&I 4433.)

4443 Approaches to Teaching Mathematics–Grades 4–8
(3-0) 3 hours credit. Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4433, C&I 4603, EDP 4203, and RDG 3533 in semester prior to student teaching.
Study of curricula, instructional, and management approaches to teaching mathematics grades 4–8. This course emphasizes a constructivist approach to the teaching of mathematics, including the use of technology in diverse learning environments. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. Field experience required. (Formerly C&I 4423. Credit cannot be earned for more than one of the following: BBL 4443, C&I 4423, or C&I 4443.)

4533 Language Arts and Social Studies Approaches and Classroom Management Strategies–Grades 4–8
(3-0) 3 hours credit. Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4543, C&I 4553, EDP 4203, and RDG 3533 in semester prior to student teaching for Grades 4–8 LA/RDG/SS certification. Concurrent enrollment in RDG 3533 for Grades 4–8 ESL certification.
This course provides preservice teachers the opportunity to work with students in grades 4–8 in school settings. Preservice teachers will design and teach developmentally appropriate language arts and social studies curriculum, instruction, and assessment. Preservice teachers will also identify and implement effective classroom management strategies. This course must be completed with a grade of "C–" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8 and must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. Field experience required. (Formerly C&I 4503. Credit cannot be earned for both C&I 4533 and C&I 4503.)

4543 Approaches to Teaching Social Studies–Grades 4–8
(3-0) 3 hours credit. Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4533, C&I 4553, EDP 4203, and RDG 3533 in semester prior to student teaching.
This course emphasizes student-centered curricula that meet the needs of diverse students in grades 4–8. Preservice teachers examine and apply models of teaching and learning to develop the knowledge, values, and experiential bases necessary for effective teaching. Students will demonstrate proficiency by creating and teaching lesson plans that specifically address the 4th–8th grade Social Studies standards as well as integrate other content, incorporate technology, and address diversity. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. Field experience required. (Formerly C&I 4513. Credit cannot be earned for both C&I 4543 and C&I 4513.)

4553 Approaches to Service-Learning in Social Studies–Grades 4–8
(3-0) 3 hours credit. Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4533, C&I 4543, EDP 4203, and RDG 3533 in semester prior to student teaching.
This course examines the philosophy, methodology, and components of service-learning. Service-learning is the engagement of students in activities designed to address or meet a community need, where students learn how their service makes a difference to themselves and in the lives of the service recipients, and where learning is intentionally linked to academics. Students will design and implement a service-learning project having social studies as the focus. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. Field experience required. (Formerly C&I 4523. Credit cannot be earned for both C&I 4553 and C&I 4523.)

4603 Mathematics and Science Approaches and Classroom Management Strategies–Grades 4–8
(3-0) 3 hours credit. Prerequisites: Must be admitted to the Teacher Certification Program. Concurrent enrollment in C&I 4433, C&I 4443, EDP 4203, and RDG 3533 in semester prior to student teaching.
This course provides preservice teachers the opportunity to work with students in grades 4–8 in school settings. Preservice teachers will design and teach developmentally appropriate mathematics and science curriculum, instruction, and assessment. Preservice teachers will also identify and implement effective classroom management strategies. This course must be completed with a grade of "C–" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8 and must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. Field experience required. (Credit cannot be earned for both C&I 4603 and BBL 4603.)

4616 Student Teaching: Early Childhood–Grade 6
6 hours credit. Prerequisites: Admission to the Teacher Certification Program; completion of all requirements for admission to the EC–6 student teaching semester, and completion of 21 semester credit hours of Professional Education: C&I 4303, C&I 4353, C&I 4403, ECE 4143, ECE 4203, RDG 3823, and RDG 4833. A grade of "B–" or better in C&I 4303, C&I 4353, C&I 4403, RDG 3823, and RDG 4833. A grade of "C–" or better is required for C&I 4616 to be recommended for teacher certification. Individuals must apply to the director of student teaching one semester in advance.
Bilingual EC–6 prerequisites: Admission to the Teacher Certification Program; completion of all requirements for admission to the EC–6 student teaching semester, completion of 18 semester credit hours of Professional Education: BBL 4033, BBL 4063, BBL 4073, BBL 4353, BBL 4403, and RDG 3823.
Full semester of full-day student teaching in a regular or bilingual EC–grade 6 classroom under the supervision of University faculty. Student teacher will be responsible for planning, implementing, and evaluating instruction in collaboration with the cooperating teacher and in conjunction with the UTSA supervisor. Seminars explore issues in teaching practice.

4626 Student Teaching: Grades 4–8

6 hours credit. Prerequisites: Admission to the Teacher Certification Program; completion of all requirements to the 4–8 student teaching semester, including all relevant practice TExES examinations, and completion of 24 semester credit hours: C&I 4533, C&I 4603, EDP 3303, ESL 3063, MAT 1203, RDG 3533, RDG 3633, RDG 3803. A grade of "C–" or better is required for the student teaching course to be recommended for teacher certification. Individuals must apply to the director of student teaching one semester in advance.

4–8 Generalist students: A grade of "B–" or better is required for RDG 3533. A grade of "C–" or better is required for C&I 4533 and C&I 4603.

4–8 Mathematics/Science students: The following courses completed with a grade of "B–" or better: C&I 4433, C&I 4443, C&I 4603, RDG 3523, and RDG 3533.

4–8 Language Arts, Reading, and Social Studies students: The following courses completed with a grade of "B–" or better: C&I 4533, C&I 4543, C&I 4553, RDG 3523, RDG 3533, RDG 3633.

4–8 ESL students: Completion of a minimum of 15 semester credit hours of the ESL specialization; and completion of C&I 4533, ESL 4003, EDU 2103, EDP 3303, EDP 4203, or BBL 5053.

4–8 Bilingual students: Completion of all requirements for admission to the Bilingual 4–8 student teaching semester, and completion of 15 semester credit hours of Professional Education: BBL 4033, BBL 4063, BBL 4073, C&I 4433 or C&I 4443, and C&I 4603.

Full semester of full-day student teaching in a regular upper elementary/middle school classroom under the supervision of University faculty is required. Student teacher will be responsible for planning, implementing, and evaluating instruction in collaboration with the cooperating teacher and in conjunction with the UTSA supervisor. Seminars explore issues in teaching practice.

4646 Student Teaching: Grades 8–12

6 hours credit. Prerequisites: Admission to the Teacher Certification Program and the student teaching semester, and completion of C&I 4203, EDP 3203, EDP 4203, and RDG 3773. Can lack no more than 6 hours in content subject matter. A grade of "B–" or better in C&I 4203. A grade of "C–" or better is required for the student teaching course to be recommended for teacher certification. Individuals must apply to the director of student teaching one semester in advance.

Full semester of full-day student teaching in grades 8–12. Student teacher will be responsible for planning, implementing, and evaluating instruction in collaboration with the cooperating teacher and in conjunction with the UTSA supervisor. Individuals pursuing a Basic Secondary Certificate, Concentration A, will student teach in the single teaching field for which certification is sought. Individuals with two teaching fields will student teach in their major teaching field. Seminars explore issues in teaching practice.

4716 Student Teaching: All Level EC–12

6 hours credit. Prerequisites: Admission to the Teacher Certification Program; completion of all requirements for the All-Level student teaching semester.

All Level Physical Education students: Completion of KIN 4203 and KIN 4303 with a grade of "C–" or better. A grade of "C–" or better is required for the student teaching course to be recommended for teacher certification.

All Level Health Education students: Completion of C&I 4203, and EDP 3303 with a grade of "C–" or better. A grade of "C–" or better is required for the student teaching course to be recommended for teacher certification.

Special Education students: All courses required for the degree and certification in All Level special education must be completed prior to student teaching. SPE 3653 and SPE 4653 must be completed with a grade of "B–" or better to serve as prerequisites for C&I 4716. A grade of "C–" or better is required for the student teaching course to be recommended for teacher certification.

All Level Music students: Completion of C&I 4203, C&I 4213, EDP 3203, and RDG 3773. A grade of "C–" or better in C&I 4203 and C&I 4213. A grade of "C–" or better is required for the student teaching course to be recommended for teacher certification.

All Level Art students: Completion of all requirements for admission to the student teaching semester, and C&I 4203, EDU 2103, EDP 3203 or EDP 3303, EDP 4203, and RDG 3523 or RDG 3773. A grade of "B–" or better in C&I 4203. A grade of "C–" or better is required for the student teaching course to be recommended for teacher certification.

Languages other than English students: Completion of all requirements for admission to the student teaching semester, and C&I 4203, EDP 3203, EDP 4203, and RDG 3773. Can lack no more than 6 hours in content subject matter. A grade of "B–" or better in C&I 4203. A grade of "C–" or better is required for the student teaching course to be recommended for teacher certification.

All courses for degree/certification plan must be completed prior to student teaching. Full semester of full-day student teaching in an elementary or middle school setting and in a high school setting (grades 8–12) in the certificate area sought. Student teacher will be responsible for planning, implementing, and evaluating instruction in collaboration with the cooperating teacher and in conjunction with the UTSA supervisor. Meets student teaching requirements for the All-Level certificate. Seminars explore issues in teaching practice. A grade of "C–" or better is required for the student teaching course to be recommended for teacher certification. Individuals must apply to the director of student teaching one semester in advance.

4911-3 Independent Study

1 to 3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.

Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4923 Internship in Education
3 hours credit. Prerequisites: Admission to the Teacher Certification Program; a bachelor's degree; completion of all coursework requirements for the certification program; consent of the COEHD Advising and Certification Center; and consent of the director of student teaching. Internships to be jointly supervised by an employing school district and UTSA.
Experiences will relate to the intern as the teacher-of-record in the classroom. May be repeated for credit.

4951-3 Special Studies in Curriculum and Instruction
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisite: Consent of instructor.
Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Thesis
3 hours credit. Prerequisites: Enrollment limited to candidates for honors in the Department of Interdisciplinary Learning and Teaching during the last two semesters; consent of the Honors College.
Supervised research and preparation for an honors thesis. May be repeated once with advisor's approval.

Dance (DAN)

Department of Music, College of Liberal and Fine Arts

1013 Ballet I
(3-0) 3 hours credit.
An introductory course in ballet for those who have no previous ballet experience. Students will learn the format of a ballet class and incorporate ballet terminology with the positions and movements of the body.

1113 Introduction to Modern Dance
(3-0) 3 hours credit.
An introduction to modern dance technique. Students will learn basic modern dance techniques by studying various choreographers and movements throughout the history of modern dance. (Formally MUS 2763. Credit cannot be earned for both DAN 1113 and MUS 2763.)

2013 Ballet II
(3-0) 3 hours credit. Prerequisite: DAN 1013 or the equivalent.
An intermediate course designed for students who have had at least one year of ballet training. Further refinement of technique, alignment, strength, balance, and flexibility will be achieved through barre and center floor work.

2103 History of Dance
(3-0) 3 hours credit.
An overview of the history of dance from ancient civilizations through the present. The importance and role of dance within major civilizations and historical periods will be presented. Students will study major dance movements, choreographers, and notable dancers throughout history.

2213 Jazz and Musical Theater Dance
(3-0) 3 hours credit.
Introduction to jazz dance techniques with emphasis on how dance is applied in musical theatre. Dance styles will include but are not limited to tap, step, and swing. Students will also study the styles of known musical choreographers such as Bob Fosse and Jerome Robbins while developing performance technique and facial expression. (Formerly MUS 2773. Credit cannot be earned for both DAN 2213 and MUS 2773.)

2783 Topics in Dance
(3-0) 3 hours credit.
Studio dance instruction and survey focused on a genre of dance. May be repeated for credit when topics vary. (Formerly MUS 2783.)

Early Childhood (ECE)

Department of Interdisciplinary Learning and Teaching, College of Education and Human Development

3133 Programs in Early Childhood
(3-0) 3 hours credit.
Survey of historical, philosophical, psychological, and sociocultural foundations of early childhood programs. Examination of past and current trends in early childhood programs. Emphasis on inclusive education approaches to program development, curriculum design, and instructional methods. Review of culturally responsive programs; technological tools for instruction, and effective accommodations for groups of young children representing a wide range of ability. Field experience required.

3143 Child Growth and Development
(3-0) 3 hours credit. Concurrent enrollment in ECE 3313 and ECE 3603 is required.
Examination of child development theories (conception through elementary years) within different domains that affect children's development and learning including, physical, cognitive, linguistic, social, and emotional. Emphasis on multicultural theoretical perspectives of child development addressing culturally and linguistically diverse populations and children with atypical patterns of development. Field experience required. (Formerly ECE 2103. Credit cannot be earned for both ECE 3143 and ECE 2103.)

3313 Play, Creativity, and Learning
(3-0) 3 hours credit. Concurrent enrollment in ECE 3143 and ECE 3603 is required.
A study of play theories as they relate to creativity, development, and learning. Will provide early childhood and elementary educators with knowledge and skills necessary to promote and guide children's play as a fundamental learning mechanism within culturally, linguistically, and cognitively diverse classrooms. Emphasis on effective strategies, equipment, materials, and activities that support and encourage children's play and creativity at the early childhood and elementary grades. Field experience required.

3603 Language and Literacy Acquisition
(3-0) 3 hours credit. Concurrent enrollment in ECE 3143 and ECE 3313 is required.
Exploration of theories of language and literacy development in young children with implications for acquisition of language and early literacy concepts for all children. Explores ways that educators can enhance language and literacy development and introduces appropriate, research-based approaches to teach early reading and writing in diverse classroom settings. Field experience required. (Formerly titled "Language and Cognitive Development in EC–4.")

4103 Guidance of Young Children in Groups
(3-0) 3 hours credit.
Study of effective strategies for guiding the social-emotional development and learning of children, including those with special needs, in group settings. Emphasis on classroom management and discipline methods; understanding human interactions and the cultural dynamics of groups; and guiding children in task involvement. Examination of strategies for facilitating cooperative activities and use of materials; the design of effective learning environments; conflict resolution techniques, and strategies for enhancing the inclusion of children with special needs in social and learning contexts. Field experience required.

4123 Family and Community Resources in Early Childhood
(3-0) 3 hours credit.
Study of approaches to family, community, societal, cultural, and ideological support systems in children's growth, learning, and development. Emphasis on how these factors are related in the permissive-restrictive dimensions of child rearing and socialization in broad perspectives across environmental contexts. Examination of resources and systems to address the special needs of families with children who are "at risk" or have disabilities. Review of technological tools used to locate and compile information on community resources. Field experience required.

4143 Principles and Practices of Differentiated Education EC–6
(3-0) 3 hours credit. Prerequisites: Admission to the Teacher Certification Program, completion of C&I 4353, C&I 4403, ECE 4203, and RDG 3823. Concurrent enrollment in C&I 4303 and RDG 4833 is required. May not be taken concurrently with C&I 4353, C&I 4403, ECE 4203, and RDG 3823.
This course addresses the exploration of culturally responsive instruction for diverse groups of learners with a broad range of abilities, interests, and backgrounds. Identification of theoretical perspectives and principles for differentiated education in early childhood and elementary settings will be explored. Emphasis is on the development of effective instructional planning, supportive learning environments, and flexible teaching practices that accommodate individual needs within group settings. Restricted course; advisor code required for registration. Field experience required.

4153 Culturally Appropriate Assessment for Infants and Young Children
(3-0) 3 hours credit.
Selecting and employing culturally fair assessment and evaluation techniques that are reliable, valid, and developmentally appropriate for infants and young children. Includes the examination of strategies such as developmental checklists, parent interviews, play-based, portfolios, and informal observations for conducting assessment. Using assessment outcomes appropriately for instructional and curricular planning.

4203 Assessment and Evaluation in EC–6
(3-0) 3 hours credit. Prerequisites: Admission to the Teacher Certification Program, completion of ECE 3143, ECE 3313, and ECE 3603. Concurrent enrollment in C&I 4353, C&I 4403, and RDG 3823.
Principles of designing and using assessment and evaluation techniques that are culturally fair, intellectually sound, reliable, dependable, and content-valid for children in EC–grade 6. Emphasis on differentiation among criterion-referenced, norm-referenced, individual, informal, authentic, and group assessments. Review of learning theories and strategies for using assessment data to inform instructional planning, and matching assessment techniques to individual children and learning situations. Restricted course; advisor code required for registration. Field experience required.

4913 Independent Study
3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4953 Special Studies in Early Childhood and Elementary Education
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Thesis
3 hours credit. Prerequisites: Enrollment limited to candidates for honors in the Department of Interdisciplinary Learning and Teaching during the last two semesters; consent of the Honors College.
Supervised research and preparation for an honors thesis. May be repeated once with advisor's approval.

Economics (ECO)

Department of Economics, College of Business

2003 Economic Principles and Issues [TCCN: ECON 1301.]
(3-0) 3 hours credit.
A nontechnical introduction to economic concepts such as scarcity, costs and benefits, supply and demand, trade, employment, and growth, with applications to current economic issues and policies. May not be counted toward a major in economics, but may be counted as a free elective for College of Business students. (Formerly titled "Introduction to Political Economy.")

2013 Introductory Macroeconomics [TCCN: ECON 2301.]
(3-0) 3 hours credit. Prerequisite: Placement into a college-level mathematics course.
Economic analysis at the national level, including the determination of aggregate income and employment, operation of the domestic and international monetary systems, short-term income fluctuations, and long-term economic growth.

2023 Introductory Microeconomics [TCCN: ECON 2302.]
(3-0) 3 hours credit. Prerequisite: Placement into a college-level mathematics course.
An introduction to the economic theory of decision making by consumers and business firms; an analysis of the domestic and international market systems and their roles in allocating goods and services; and problems of market failure.

2951-3 Special Topics in Political Economics
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study of issues in political economy not normally or not often available as part of the regular course offerings. Special Topics in Political Economics may be repeated for credit when topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree. May not be counted toward a major in economics, but may be counted as a free elective for College of Business majors.

3013 Theory of Price
(3-0) 3 hours credit. Prerequisites: Completion of ECO 2013, ECO 2023, and MAT 1033, or their equivalents, with a grade of "C–" or better.
Operations of individual markets, market structure, theory of the firm, theory of production, demand theory, general equilibrium, and welfare economics.

3033 Economics of Managerial Decisions
(3-0) 3 hours credit. Prerequisites: Completion of ECO 2013, ECO 2023, and MAT 1033, or their equivalents, with a grade of "C–" or better.
Managerial economic decisions in firms and related entities. Topics include demand analysis, least-cost production, profit strategy, the influence of various market structures on the firm, advanced issues in pricing, and the impact of the international sector.

3053 Aggregate Economic Analysis
(3-0) 3 hours credit. Prerequisites: Completion of ECO 2013 and ECO 2023, or their equivalents, with a grade of "C–" or better.
Analysis of the measurement, determination, and control of aggregate economic activity; the monetary system in relation to income and employment; short-term income fluctuations; and long-term growth.

3113 Introduction to Mathematical Economics
(3-0) 3 hours credit. Prerequisites: Completion of ECO 2013, ECO 2023, and MAT 1033, or their equivalents, with a grade of "C–" or better, or consent of instructor.
Systematic approach to economic analysis using basic mathematical tools; treatment of optimizing behavior with applications to consumer and business firms; emphasis on understanding and application of analytical techniques.

3123 Introduction to Econometrics and Business Forecasting
(3-0) 3 hours credit. Prerequisites: Completion of IS 3003, STA 1053, and MAT 1033, or their equivalents, with a grade of "C–" or better, or consent of instructor.
Measurement in economics and business that strives to mix the development of technique with its application to economic analysis. Major topics include the nature of economic and business data, specific forms of modeling and forecasting, and the use of microcomputer programs in econometric modeling and forecasting.

3163 Evolution of Economic Thought
(3-0) 3 hours credit. Prerequisite: Completion of one of the following: ECO 2003, ECO 2013, ECO 2023, or the equivalent, with a grade of "C–" or better, or consent of instructor.
Development of economic theories, models, and schools of thought from the birth of market economies to the present, with an emphasis on the historical, institutional, and social forces shaping economic thinking and public policy.

3183 Economic History of the United States
(3-0) 3 hours credit. Prerequisite: Completion of one of the following: ECO 2003, ECO 2013, ECO 2023, or the equivalent, with a grade of "C–" or better, or consent of instructor.
The growth and development of the American economy from colonial times to the present; emphasis on applying a variety of economic concepts to a topical study of the economic forces that shaped the country's history.

3193 International Economics
(3-0) 3 hours credit. Prerequisite: Completion of one of the following: ECO 2003, ECO 2013, ECO 2023, or the equivalent, with a grade of "C–" or better, or consent of instructor.
Principles of international trade; significance of geographic, economic, social, and political influences; current problems in international trade and payments; tariffs and commercial policy; and the role of international organizations. (Formerly titled "The International Economy.")

3213 Economics of Antitrust and Regulation
(3-0) 3 hours credit. Prerequisite: Completion of one of the following: ECO 2003, ECO 2013, ECO 2023, or the equivalent, with a grade of "C–" or better, or consent of instructor.
Theory and practice of governmental regulation, deregulation, and privatization; economic, legal, and ethical concerns regarding private-sector output; and pricing as influenced by public policy and marketing structure.

3253 Economics of Public and Social Issues
(3-0) 3 hours credit. Prerequisite: Completion of one of the following: ECO 2003, ECO 2013, ECO 2023, or the equivalent, with a grade of "C–" or better, or consent of instructor.
A seminar on applying economic reasoning and models to a wide variety of public, ethical, and social issues. Uses advanced techniques in political economy.

3263 Industrial Organization
(3-0) 3 hours credit. Prerequisite: Completion of one of the following: ECO 2003, ECO 2023, or the equivalent, with a grade of "C–" or better.
Theory and empirical evidence relating to the structure of American industry and its effect on the firm's conduct and performance, government policy, and regulation.

3273 Introduction to Public Sector Economics
(3-0) 3 hours credit. Prerequisite: Completion of one of the following: ECO 2003, ECO 2023, or the equivalent, with a grade of "C–" or better.
Role of government in the marketplace; cost-benefit analysis; spending and regulatory alternatives; efficiency and equity analysis of taxes; incentives within government; and public policy issues.

3283 Labor Economics
(3-0) 3 hours credit. Prerequisite: Completion of one of the following: ECO 2003, ECO 2013, ECO 2023, or the equivalent, with a grade of "C–" or better, or consent of instructor.
Theories of wages and employment determination; U.S. labor history, comparative labor movements, and contemporary labor problems.

4273 Environmental and Resource Economics
(3-0) 3 hours credit. Prerequisite: Completion of one of the following: ECO 2003, ECO 2023, or the equivalent, with a grade of "C–" or better.
Economic principles applied to natural resource and environmental problems; relationship of market and nonmarket forces to environmental quality and demands for natural resources; and development of tools for policy analysis.

4303 Economics of Developing Countries
(3-0) 3 hours credit. Prerequisite: Completion of one of the following: ECO 2003, ECO 2013, or the equivalent, with a grade of "C–" or better, or consent of instructor.
Specific economic problems of developing countries and national groupings; basic approaches to economic development; major proposals for accelerating development; role of planning; and trade, aid, and economic integration. (Formerly titled "Economic Problems of Developing Countries.")

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College of Business.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933 Internship in Economics
3 hours credit. Prerequisites: 12 semester credit hours of upper-division economics, an overall 2.5 grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms.
This opportunity for work experience in research or applied economics may be undertaken either in private business or a public agency; opportunities are developed in consultation with the faculty advisor and Department Chair and require approval of both. This course will not count as a required economics course. Internships may be repeated (a total of 6 semester credit hours) provided the internships are with different organizations.

4951-3 Special Studies in Economics
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Thesis
3 hours credit. Prerequisite: Enrollment limited to students applying for Honors in Economics (see page 34).
Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval.

Education (EDU)

Department of Educational Leadership and Policy Studies, College of Education and Human Development

2103 Social Foundations for Education in a Diverse U.S. Society
(3-0) 3 hours credit. Prerequisites: Sophomore standing and passing scores on all three sections of a Texas Success Initiative (TSI) approved assessment instrument.
Students will explore the relationship between school and a diverse U.S. society. They will explore the need for an educational philosophy suited for educating a diverse population; the role of ethnicity, gender, and class in the historical construction of schooling as it is today, the interactive effects of culture and economics upon and within schools, and the politics of education. Students will explore the interconnections of the above issues.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4953 Special Studies in Education
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Educational Leadership (EDL)

Department of Educational Leadership and Policy Studies, College of Education and Human Development

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4953 Special Studies in Educational Leadership
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Thesis
3 hours credit. Prerequisite: Enrollment limited to Honors College students during the last two semesters with sponsorship by a department faculty member.
Supervised research and preparation for an honors thesis. May be repeated for credit once with advisor's approval.

Educational Psychology (EDP)

Department of Educational Psychology, College of Education and Human Development

1703 College Success Seminar
(3-0) 3 hours credit.
Intensive training in the understanding and application of essential academic college-level learning, cognition and motivation theories and strategies. Topics include: self-assessment/goal clarification; cognitive and motivational theories in regards to the learning process; time/task management, college textbook reading, lecture note taking, career counseling, library/online research skills, examination preparation, and diversity awareness. Students will engage in critical-thinking/problem-solving activities, and practice oral, written, and electronic communications skills. Laboratory required.

2113 Development in the Elementary and Middle School Child
(3-0) 3 hours credit. Prerequisite: Sophomore standing.
An introduction to the cognitive, psychosocial, sociocultural, psychoanalytic and moral theories of development from birth through adolescence. Topics also include atypical development, exceptionality, and learning challenges. Emphasis is on applications at the elementary school level.

3133 Learning and Development in the Early Elementary Context EC–6
(3-0) 3 hours credit. Prerequisite: Sophomore standing.
An introduction to major theories of learning and development, with an emphasis on applications at the elementary level. Topics include individual and group differences, motivation, and elementary-level classroom management.

3203 Learning and Development in the Secondary School Adolescent
(3-0) 3 hours credit. Prerequisites: Sophomore standing and satisfaction of the Texas Success Initiative (TSI) requirement.
An introduction to major theories of learning and development, with an emphasis on applications at the secondary level. Topics include individual and group differences, motivation, and secondary-level classroom management.

3303 Learning and Development in the Middle School Context (Grades 4–8)
(3-0) 3 hours credit. Prerequisites: Sophomore standing and satisfaction of the Texas Success Initiative (TSI) requirement.
An introduction to the major theories of learning and development, with an emphasis on applications to the middle school level (grades 4–8). Topics include child and adolescent development, individual and group-level differences, student motivation, and classroom management.

4203 Assessment and Evaluation
(3-0) 3 hours credit. Prerequisites: Completion of all requirements for admission to the Teacher Certification Program, including but not limited to satisfaction of the Texas Success Initiative (TSI) requirement, and completion of EDU 2103 and EDP 3203 or EDP 3303.
This course will discuss the principles and techniques necessary to develop sound assessment strategies. The primary focus of the course will be on the creation of test items, administration of classroom evaluation procedures, and the roles of testing, measurement, and evaluation in daily classroom practice. The use and interpretation of standardized tests, alternative assessments, and norm- and criterion-referenced assessments will also be discussed as well as theoretical and ethical issues related to testing and evaluation. Restricted course; advisor code required for registration.

4913 Independent Study
3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4953 Special Studies in Educational Psychology
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Thesis
3 hours credit. Prerequisite: Enrollment limited to Honors College students during the last two semesters with sponsorship by a department faculty member.
Supervised research and preparation for an honors thesis. May be repeated once with advisor's approval.

Electrical Engineering (EE)

Department of Electrical and Computer Engineering, College of Engineering

1323 Introduction to Electrical Engineering Profession
(3-1) 3 hours credit. Prerequisite: Electrical Engineering or Computer Engineering freshman.
Introduction of state-of-the-art engineering and advanced technology covering a wide range of topics relevant to Internet technologies, entertainment, medicine and communications; contemporary issues; written and oral communication; professional and ethical responsibilities; engineering problem formulation and solution; engineering design using digital and analog tools along with MATLAB. One hour of recitation per week. (Credit cannot be earned for both EE 1323 and EGR 1303.)

2213 Electric Circuits and Electronics [TCCN: ENGR 2305.]
(3-0) 3 hours credit. Prerequisite: PHY 1923. Corequisite: EGR 2323.
Electric, magnetic, and electronic circuits; transient analysis, transforms, and phasors; transformers; solid state devices; analog and digital circuits. Not open to electrical engineering majors. (Formerly EE 2214. Credit cannot be earned for both EE 2213 and EE 2214.)

2423 Network Theory
(3-1) 3 hours credit. Prerequisites: EE 1323 and completion of or concurrent enrollment in EGR 2323 and PHY 1923.
Basic network principles; simple resistive circuits; steady state responses to DC and AC signals; node-voltage and mesh-current analysis; source transformations and superposition; Thevenin and Norton equivalents; natural and step transient responses of first and second order circuits; Laplace transform in circuit analysis; and use of SPICE to solve network problems. One hour of problem solving recitation per week.

2511 Logic Design Laboratory
(1-2) 1 hour credit. Prerequisite: Completion of or concurrent enrollment in EE 2513.
Introduction to digital design techniques. Implementation of basic digital logic and hardware; combinational circuits, flip-flops, registers, sequential circuits and state-machines.

2513 Logic Design
(3-1) 3 hours credit. Prerequisites: EE 1323 and completion of or concurrent enrollment in CS 2073.
Number systems, Boolean algebra, combinational and sequential circuit design; and minimization and implementation. One hour of problem solving recitation per week.

3113 Electrical Engineering Laboratory I
(1-6) 3 hours credit. Prerequisites: EE 2423, EE 2513, and completion of or concurrent enrollment in EE 3313.
Introduction to basic measurement equipment and techniques; use of circuit simulation tools; comparison to empirical performance of simple circuits using discrete devices and circuits; simple subsystem circuit design; introduction to automated data acquisition; and laboratory technical communication.

3213 Electromagnetic Engineering
(3-1) 3 hours credit. Prerequisites: EGR 3323 and PHY 1923.
Review of vector calculus, electrostatics, magnetostatics, electrodynamics, electromagnetic waves, dielectrics, boundary conditions, and RLC circuits. Selected other topics include wave guides, anisotropic crystal optics, transmission lines, fiber optics, reflection and refraction, and special relativity. One hour of problem solving recitation per week.

3223 C++ and Data Structures
(3-1) 3 hours credit. Prerequisite: EE 3463.
Review of C++ non-OOP concepts, object-oriented programming, inheritance, virtual functions and polymorphism, and operator overloading. In-depth study of data structures including stacks, queues, linked lists, trees, binary trees and its application to binary search trees and sorting. One hour of problem solving recitation per week.

3313 Electronic Circuits I
(3-1) 3 hours credit. Prerequisites: EE 2423 and PHY 1923.
Electrical properties of semiconductors; P-N junctions; diode circuits; BJTs and FETs; application to digital and analog circuits; and use of SPICE to solve simple circuits. One hour of problem solving recitation per week.

3323 Electronic Devices
(3-0) 3 hours credit. Prerequisites: CHE 1103 and EE 3313.
Introduction to semiconductor materials, fundamentals of quantum mechanics and carrier phenomena, operating principles of P-N junction diodes, metal-semiconductor contacts (Schottky diodes), bipolar-junction transistors, field-effect transistors (MOSFETS, complementary MOSFETS or CMOS, JFETS and MESFET), photodetectors and optoelectronic devices.

3413 Analysis and Design of Control Systems
(3-1) 3 hours credit. Prerequisites: EGR 2213 and EGR 2323 for electrical engineering majors (EGR 2513 and EE 2213 for mechanical engineering majors).
Modeling, analysis, and design of linear automatic control systems; time and frequency domain techniques; stability analysis, state variable techniques, and other topics. Control systems analysis and design software will be used. One hour of problem solving recitation per week.

3423 Signals and Systems I
(3-1) 3 hours credit. Prerequisites: EE 2423 and EGR 2323.
Basic concepts, functional representation and transformations of signals, properties of continuous-time signals and systems, differential-equation models; Dirac delta function, linear convolution, impulse response, frequency response; Fourier series and Fourier transform, use of MATLAB to solve problems. One hour of problem solving recitation per week.

3463 Microcomputer Systems I
(3-0) 3 hours credit. Prerequisites: EE 2513 and CS 2073.
Introduction to assembly- and C-language programming; architecture, peripherals, operating system interfacing principles, and development tools; and software documentation techniques.

3513 Electromechanical Systems
(3-0) 3 hours credit. Prerequisite: EGR 2213.
Principles of electromechanical energy conversion; polyphase circuits; dynamic analysis and simulation of energy-transfer devices; and power devices.

3523 Signals and Systems II
(3-0) 3 hours credit. Prerequisite: EE 3423.
Discrete-time systems and their characteristics, sampling continuous-time signals, linear and circular convolutions, cross-correlation, discrete-time Fourier transform of periodic signals, Z-transforms for LTI systems, Laplace transforms, applications, and LTI system characteristics, use of MATLAB to solve problems.

3533 Random Signals and Noise
(3-0) 3 hours credit. Prerequisites: EE 3423 and EGR 2323.
Probability and random variables, conditional distribution, conditional density function; operations on random variables; Central Limit Theorem; random process; spectral analysis of random processes; and linear systems with random inputs.

3563 Digital Systems Design
(2-3) 3 hours credit. Prerequisites: EE 2511 and EE 2513.
Introduction to switching theory; design of complex combinational and sequential circuits; analysis of hazards and fault detection, location, and tolerance; and design and verification of complex circuitry using schematic entry, functional modeling, and mixed-mode simulation.

4113 Electrical Engineering Laboratory II
(1-6) 3 hours credit. Prerequisites: EE 3113, and completion of or concurrent enrollment in either EE 3563 for computer engineering majors or EE 4313 for electrical engineering majors.
Complex electronic circuit subsystem design, improving measurement system performance, impact of circuit parasitics, signal integrity, electromagnetic interference, thermal analysis, printed circuit board layout, and technical communication.

4123 Power Engineering Laboratory
(1-4) 3 hours credit. Prerequisites: EE 3113, completion of or concurrent enrollment in EE 4753 and EE 4763.
Power Electronics Laboratory to analyze and test DC-DC converters, voltage mode and current mode control. Power Systems Simulation Laboratory to analyze and design power systems that include power flow, transmission line, transient and fault analysis.

4243 Computer Organization and Architecture
(2-3) 3 hours credit. Prerequisites: EE 3463 and EE 3563.
Design of advanced state machines and computer systems, and processor design using computer-assisted design and analysis tools.

4313 Electronic Circuits II
(3-0) 3 hours credit. Prerequisites: EE 3313 and completion of or concurrent enrollment in EE 3523.
Multiple transistor circuits; feedback and frequency response analysis; operational amplifier analysis and design; power semiconductors; and other topics. Design of analog and digital circuits; and use of SPICE to analyze complex circuits.

4323 Dielectric and Optoelectronic Engineering Laboratory
(2-4) 3 hours credit. Prerequisites: EE 3213, completion of or concurrent enrollment in EE 3323 for Topic 1 and completion of or concurrent enrollment in EE 4353 for Topic 2.
Principles of dielectric devices and optical components and systems. May be repeated for credit when topics vary.
Topic 1: Capacitance, resistance, and inductance device evaluations, impedance frequency and temperature spectrum analysis, characterization of tunable dielectric microwave materials, electromechanical coupling of piezoelectric devices.
Topic 2: Lasers, photo-detectors, phase locked interferometer, electro-optical and nonlinear optic devices, optical image processing, Fourier optics, holographic recording, and photorefractive storage.

4353 Introduction to Modern Optics
(3-0) 3 hours credit. Prerequisite: EE 3213.
The basic principles of geometrical and physical optics. Topics include lens design, interference, diffraction, and polarization. Selected other topics may include Fourier optics, coherence theory, holography, lasers, Gaussian beams, acousto-optics, electro-optics, and fiber-optic communications.

4443 Discrete-Time and Computer-Controlled Systems
(3-0) 3 hours credit. Prerequisites: EE 3413 and completion of or concurrent enrollment in EE 3523.
Sampled-data techniques applied to the analysis and design of digital control systems; stability criteria; compensation; and other topics.

4453 Selected Topics in Digital Signal Processing
(3-0) 3 hours credit. Prerequisite: EE 4643.
Theoretical basis for signal processing and applications. Topics include modeling of biological systems; signal processing in computer security; data and image encryption; digital image compression; pattern recognition; biomedical signal and image processing; signal processing for system biology; genomic signal processing and statistics; speech and audio signal processing; multimedia signal processing. May be repeated for credit when topics vary. (Formerly titled "Principles of Bioengineering and Bioinstrumentation.")

4513 Introduction to VLSI Design
(2-3) 3 hours credit. Prerequisites: EE 3323 and EE 3463.
Design of integrated digital systems; logic simulation, standard cell libraries, circuit simulation, and other computer-aided design tools; and integrated circuit processing and device modeling.

4523 Introduction to Micro and Nanotechnology
(2-3) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in EE 3323.
Survey of microfabrication techniques, scaling laws, mechanical, optical and thermal transducers, microfluidic applications, nanostructures. (Credit cannot be earned for both EE 4523 and PHY 4653.)

4533 Principles of Microfabrication
(1-6) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in EE 3323.
Photolithography, thin film deposition, doping, wet patterning, plasma etching, thin film characterization. Students will fabricate simple microstructures such as coplanar waveguides, microfluidic devices and nanopowder silica films.

4543 Advanced Topics in Micro and Nanotechnology
(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in EE 3323.
Topics to be selected from advanced sensors, actuators, engineered materials, device physics, microwave applications of MEMS structures, photonics, microelectronic devices, analog IC design, mixed-signal circuits and systems. May be repeated for credit when topics vary.

4553 VLSI Testing
(2-3) 3 hours credit. Prerequisite: EE 3463.
Faults modeling and simulation; stuck at faults, bridging faults, and functional testing; self-testing concepts; standard and test patterns; device and system testing; and design for testability.

4563 FPGA-Based System Design
(3-0) 3 hours credit. Prerequisites: EE 3463 and EE 3563.
FPGAs replace digital circuits in most applications. This course addresses underlying theory and applications: Introduction to Field Programmable Gate Arrays; General-Purpose FPGA Architecture; Reconfigurable Computing Devices and Systems; Hardware Description Language for FPGAs; synthesizing FPGA interconnections; Global Timing Constraints; evaluating and optimizing problems for FPGA implementations; Arithmetic, Precision Analysis & Floating Point; FPGA vs. CPU partitioning.

4583 Microcomputer Systems II
(2-3) 3 hours credit. Prerequisite: EE 3463.
Advanced microprocessor-based system design; high-speed bus interfacing, coprocessors, and other specialized input/output devices; and high-level languages and software performance analysis.

4593 Embedded System Design
(3-0) 3 hours credit. Prerequisites: EE 3463 and EE 3563.
The goal of this course is to develop a comprehensive understanding of the technologies behind embedded systems, particularly, those using computing elements: Embedded processor selection, hardware/firmware partitioning, circuit layout, circuit debugging, development tools, firmware architecture, firmware design, and firmware debugging. C programming of embedded microcontrollers, the function and use of common peripherals, and the programming and simulation (using VHDL/Verilog) of custom single-purpose processors.

4613 Communication Systems
(3-0) 3 hours credit. Prerequisites: EE 3423 and EE 3533 or STA 3533.
Basic theory and principles of modern analog and digital communication systems; signal and noise analysis, signal-to-noise ratio, and circuit implementations.

4623 Digital Filtering
(3-0) 3 hours credit. Prerequisite: EE 3423.
DFT and spectral analysis, filter specifications and structures; linear phase filters; Z-transform, finite impulse response (FIR) filter design; design of narrowband filters and filter banks; infinite impulse response (IIR) filters; optimal filters; introduction and applications of nonlinear filters, morphological filters; and use of MATLAB to perform filter design and filtering.

4643 Digital Signal Processing
(3-0) 3 hours credit. Prerequisites: Completion of or concurrent enrollment in EE 3523, and EE 3533 or STA 3533.
Sampling and reconstruction; quantization, A/D and D/A converters; discrete time representation and analysis of filters; DTFT computation, FFT algorithms, discrete cosine transform, fast convolution; and algorithms, methods, and applications of signal processing.

4653 Digital Communications
(3-0) 3 hours credit. Prerequisites: EE 3423 and STA 3533 or EE 3533.
Basic digital modulation schemes: ASK, BPSK, QPSK, FSK, and QAM modulation, binary signal detection, matched filtering, bit error rate, intersymbol interference, equalization, signal-space methods, optimum receiver, fundamentals of information theory and block coding, convolutional coding and spread spectrum.

4663 Digital Image Processing
(3-0) 3 hours credit. Prerequisite: EE 3523.
Fundamentals and some practical applications of digital image processing. Topics include image formation, sampling, and quantization; image motion and detector noise; future extraction; image enhancement and restoration by spatial filtering and maximum entropy; image coding for bandwidth compression by DPCM; transform coding, subband coding; and use of MATLAB for image processing.

4673 Data Communication and Networks
(2-3) 3 hours credit. Prerequisites: EE 3223 and completion of or concurrent enrollment in EE 4613.
Introduction to data communication networks, electrical interface, data transmission, WAN and LAN network overview, transmission devices, transmission errors and methods of correction, and protocols.

4683 Wireless Communications
(3-0) 3 hours credit. Prerequisite: EE 3423, EE 3533 or STA 3533.
Common wireless systems and standards. Cellular radio concepts: frequency reuse and handoff strategies. Large-scale path loss models. Small-scale fading and multipath. Modulation techniques for mobile radio: performances in fading and multipath channels. Multiple access techniques. RF hardware realization issues.

4693 Fiber Optic Communications
(3-0) 3 hours credit. Prerequisites: EE 3313, EE 3423, and completion of or concurrent enrollment in EE 3213.
Light propagation using ray and electromagnetic mode theories, dielectric slab waveguides, optical fibers, attenuation and dispersion in optical fibers, optical fiber transmitters and receivers, electro-optical devices, and optical fiber measurement techniques.

4723 Intelligent Robotics
(3-2) 3 hours credit. Prerequisite: EE 3413 or ME 3543.
Coordinate transformations, forward and inverse kinematics, Jacobian and static forces, path planning techniques, dynamics, design, analysis and control of robots, sensing and intelligence. (Formerly EGR 4723 and ME 4713. Credit cannot be earned for both EE 4723 and either EGR 4723 or ME 4713.)

4733 Intelligent Control
(3-0) 3 hours credit. Prerequisite: EE 3413.
Neural networks and fuzzy logic basics, approximation properties, conventional adaptive controller design and analysis, intelligent controller design and analysis techniques for nonlinear systems, and closed-loop stability.

4743 Embedded Control Systems
(3-2) 3 hours credit. Prerequisites: EE 3413 and EE 3463.
Embedded system principles and control system concepts, programming, tools and their applications, embedded controls design, and analysis of industrial processes.

4753 Analysis of Power Systems
(3-0) 3 hours credit. Prerequisite: EE 3413.
Electric energy and environment, principles of power generation, transmission and distribution, power flow analysis, faults and transient stability analysis, power systems control and renewable energy systems.

4763 Power Electronics
(3-0) 3 hours credit. Prerequisites: EE 3113 and EE 3413.
Switch-mode power conversion, analysis and control of DC-DC converters, DC-AC inverters for motor drives and to interface renewable energy sources with utility, AC-DC rectifiers, applications in sustainable energy systems, introduction to power semiconductor devices and magnetic components.

4773 Electric Drives
(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in EE 3513.
Analysis of electric machines in combination with power electronics; torque, speed and position control; space vectors, motor drive inverter; vector control; wind energy conversion.

4811 Electrical Engineering Design I
(1-1) 1 hour credit. Prerequisites: EE 4313 for Electrical Engineering majors or EE 3563 for Computer Engineering majors, and completion of or concurrent enrollment in EE 4113.
Business planning and project management in engineering design; discussion of ethical and social issues in design; and selection of a design project, development of a detailed design proposal, and approval of a design project.

4813 Electrical Engineering Design II
(2-3) 3 hours credit. Prerequisites: EE 4113 and EE 4811.
Complex system design; advanced ATE; project management, proposals, status reporting, formal oral and written technical reports, and business plans; open-ended design project considering safety, reliability, environmental, economic, and other constraints; and ethical and social impacts.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4953 Special Studies in Electrical Engineering
(3-0) 3 hours credit. Prerequisites vary with the topic (refer to the course syllabus on Bluebook or contact the instructor).
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Engineering (EGR)
College of Engineering

1303 Exploring the Engineering Profession
(3-1) 3 hours credit.
Engineering as a career; contemporary issues; academic and career resources; written and oral communication; effective team membership; professional and ethical responsibilities; professional registration; engineering problem formulation and solution; engineering design. One hour of recitation per week.

1313 Calculus with Engineering Applications
(3-2) 3 hours credit. Prerequisite: Completion of precalculus or satisfactory performance on a placement examination.
The first of a two-part integrated physics and calculus course. Calculus topics include an introduction to the concepts of limit, continuity, and derivative, mean value theorem, and applications of derivatives such as velocity and acceleration; introduction to the Riemann integral and the fundamental theorem of calculus. Physics topics include an introduction to vectors, force and Newton's Laws of Physics. Classes meet weekly for three hours of lecture and two hours of problem solving tutorials.

1323 Physics with Engineering Applications
(3-2) 3 hours credit. Prerequisite: EGR 1313.
The second of a two-part integrated physics and calculus course. Calculus topics include applications of derivatives to maximization and curve sketching, evaluation of definite and indefinite integrals and an introduction to differential equations. Physics topics include applications of Newton's Laws and the concepts of momentum, energy, work and power. Classes meet weekly for three hours of lecture and two hours of problem solving tutorials.

1503 Engineering, Technology, and Culture
(3-0) 3 hours credit.
History, meaning, and effects of the engineering technology on our world. Technology assessed as a composite of applied science and human needs. Review of ethical implications of technologies and educational requirements for a technology dominated future.

2103 Statics [TCCN: ENGR 2301.]
(3-0) 3 hours credit. Prerequisites: MAT 1224 and PHY 1903.
Vector analysis of force systems applied to particles and rigid bodies and free body diagrams. Engineering applications of equilibrium; of moments, internal forces, and friction; and of centroids, centers of gravity, and moments of inertia.

2213 Statics and Dynamics [TCCN: ENGR 2303.]
(3-1) 3 hours credit. Prerequisites: MAT 1224 and PHY 1903.
Force, moment, equilibrium, centroids and moments of inertia, kinematics, and kinetics of particles. Not open to students in Civil or Mechanical Engineering. May not be substituted for EGR 2103. One hour of problem solving recitation.

2323 Applied Engineering Analysis I [TCCN: MATH 2321.]
(3-1) 3 hours credit. Prerequisite: MAT 1224.
Application of mathematical principles to the analysis of engineering problems using linear algebra and ordinary differential equations (ODE's). Use of software tools. Topics include: mathematical modeling of engineering problems; separable ODE's; first-, second-, and higher-order linear constant coefficient ODE's; characteristic equation of an ODE; systems of coupled first-order ODE's; matrix addition and multiplication; solution of a linear system of equations via Gauss elimination and Cramer's rule; rank, determinant, and inverse of a matrix; eigenvalues and eigenvectors; solution of an ODE via Laplace transform; numerical solution of ODE's. One hour of problem solving recitation.

2513 Dynamics [TCCN: ENGR 2302.]
(3-0) 3 hours credit. Prerequisite: EGR 2103.
Kinetics of particles and plane rigid bodies, work and energy, impulse and momentum, equations of motion and engineering applications.

3301 Engineering Co-op
1 hour credit. Prerequisite: Acceptance into the Cooperative Education in Engineering Program.
Designed for students participating in Cooperative Education in Engineering Program. Problems related to students' work assignments during their work for co-op employers. May be repeated for credit, but no more than 3 semester credit hours of Engineering Co-op may apply to a bachelor's degree. To apply 3 semester credit hours of Engineering Co-op as a technical elective toward a degree in engineering, students must petition and get approval of a faculty advisor prior to co-op activities. The grade report for the course is either "CR" (satisfactory performance) or "NC" (unsatisfactory performance).

3323 Applied Engineering Analysis II
(3-1) 3 hours credit. Prerequisite: EGR 2323.
Application of mathematical principles to the analysis of engineering problems using vector differential and integral calculus, partial differential equations, and Fourier series; complex variables; discrete mathematics; and use of software tools. One hour of problem solving recitation.

3713 Engineering Economic Analysis
(3-0) 3 hours credit. Prerequisites: ECO 2013 or ECO 2023, and MAT 1224.
Time-value of money concepts; techniques for economic evaluation of engineering alternatives; depreciation and taxes; inflation and market rates; contracting practices; funding public projects and related public policy issues.

4953 Special Studies in Engineering
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Research
3 hours credit. Prerequisite: Enrollment limited to candidates for college honors during their last two semesters; approval by the College Honors Committee.
Supervised research and preparation of an honors thesis. May be repeated once with approval.

English (ENG)

Department of English, College of Liberal and Fine Arts

2013 Introduction to Literature
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in rhetoric.
Introductory study of great works of literature with an emphasis on novels, plays, and poetry by British and American authors. Designed for nonmajors.

2213 Literary Criticism and Analysis
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in rhetoric.
A study of poetry, fiction, and drama, with close attention to literary terms, literary criticism, and the characteristics of each genre. This course includes intensive reading and extensive writing requirements and is designed to prepare students who intend to take advanced courses in literature and other students who have a commitment to the rigorous study of literature.

2223 British Literature I [TCCN: ENGL 2322.]
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Study of representative works of British literature from the medieval period to 1700. Required of students majoring in English.

2233 British Literature II [TCCN: ENGL 2323.]
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Study of representative works of British literature from 1700 to the present. Required of students majoring in English.

2263 American Literature I [TCCN: ENGL 2327.]
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Study of representative works of American literature from the pre-Colonial period to 1865. Required of students majoring in English.

2293 American Literature II [TCCN: ENGL 2328.]
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Study of representative works of American literature from 1865 to the present. Required of students majoring in English.

2323 Creative Writing: Fiction
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Offers the opportunity for intensive practice and development of techniques in the writing of fiction.

2333 Creative Writing: Poetry
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Offers the opportunity for intensive practice and development of techniques in the writing of poetry.

2343 Creative Writing: Nonfiction
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Offers the opportunity for intensive practice and development of techniques in the writing of nonfiction genres such as memoir, autobiography, and informal essays.

2383 Multiethnic Literatures of the United States
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in rhetoric.
A survey of the literature of various minority groups such as Native American, Asian American, African American, and Latina/o. Designed for nonmajors.

2413 Technical Writing [TCCN: ENGL 2311.]
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in rhetoric.
Techniques of expository writing, particularly adapted to students in technological and scientific subjects.

2423 Literature of Texas and the Southwest
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in rhetoric.
Study of the literature of Texas and the Southwest, including an examination of the region's multicultural heritage. Designed for nonmajors.

2433 Editing
(3-0) 3 hours credit. Prerequisite: ENG 2413.
Principles and applications of production editing and technical editing, including evaluation and revision of style, tone, and organization of documents. Practice in the use of editing symbols and copy marking. (Same as COM 2433. Credit cannot be earned for both ENG 2433 and COM 2433.)

3033 American Literature, 1945 to Present
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Critical study of the literature written in the United States since 1945.

3063 American Literature, 1870–1945
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Critical study of literature written in the United States in the late 19th and early 20th centuries.

3073 Young Adult Literature
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Literary analysis of the kinds of reading available for adolescents: poetry, drama, biography, science fiction, mystery, and fantasy. Both classics and current trends will be considered. Emphasis on the novel. (Formerly ENG 2373. Credit cannot be earned for both ENG 3073 and ENG 2373.)

3113 Studies in Individual Authors
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Study of the works of an individual British or American author or of several authors examined in relation to one another. May be repeated for credit when authors vary.

3123 Modern Fiction
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Critical survey of American, British, and Continental fiction of the 20th century, studied in relation to the development of modern techniques.

3133 Women and Literature
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Critical study of the presentation of women and feminist issues in various literary forms.

3153 Topics in Drama
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Study of one or more periods (e.g., Tudor-Stuart, modern, contemporary) or modes (e.g., comedy, tragedy) of drama. May be repeated for credit when topics vary.

3213 Chaucer
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Critical study of *The Canterbury Tales* and other poems. Texts in Middle English.

3223 Shakespeare: The Early Plays
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Critical study of comedies, histories, and tragedies from 1590–1601.

3233 Shakespeare: The Later Plays
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Critical study of comedies, tragedies, and romances from 1602–1613.

3243 Topics in the British Novel
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Critical study of English novels. May be repeated for credit when topics vary.

3253 The American Novel
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Reading and discussion of representative American novels.

3273 Milton
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Reading and analysis of Milton's major poems and selected prose in the context of his times.

3303 Theory and Practice of Composition
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in rhetoric.
Extensive practice in the techniques of clear, effective writing. Designed for students who will write in their professions and will supervise the writing of others.

3313 Advanced Composition
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in rhetoric.
Study of the principles and procedures of informational and persuasive prose. Emphasis on coherence, liveliness, persuasiveness, and originality. Extensive writing practice, including the writing of arguments.

3323 History of the English Language
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Historical survey of the development of the English language.

3333 Introduction to the Structure of English
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Analysis of English syntax from various theoretical perspectives, including traditional, structural, and generative. Consideration of the concept of Standard English and of language variation, especially regional and social variation within modern English.

3343 Principles of English Linguistics
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Introduction to the goals and procedures of modern linguistics, emphasizing phonetics, phonology, and morphology. Discussion of language acquisition and the neurolinguistic foundations of language ability. Some attention to topics such as semantics, pragmatics, and language change. (Same as ANT 3903 and LNG 3813. Credit cannot be earned for more than one of these courses.)

3393 Literary Theories
(3-0) 3 hours credit. Prerequisite: ENG 2213.
Critical study of the nature and function of literature and the relationship of literature to philosophy, history, and the other arts; attention to such topics as stylistics, genres, and literary history.

3413 Specialized Professional Writing
(3-0) 3 hours credit. Prerequisite: ENG 2413.
Writing for specialized purposes such as news releases, feature articles, reports, newsletters, speeches, scriptwriting, advertising, and professional correspondence.

3423 Topics in Creative Writing
(3-0) 3 hours credit. Prerequisites: ENG 2323 or ENG 2333 or ENG 2343 and consent of instructor (writing portfolio required).
Creative writing workshop in specialized area or genre other than poetry or short fiction. May be repeated for credit when topics vary.

3513 Mexican American Literature
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Critical study of literature by and about Mexican Americans, including prose, verse, drama, essays, and autobiography. Concentration on writings since 1959.

3613 African American Literature
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Critical study of literature by and about African Americans, including prose, verse, drama, essays, and autobiography.

3713 Topics in Multiethnic Literatures of the United States
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Comparative study of a specific genre or theme in the literatures of various ethnic groups in the United States such as African American, Asian American, Native American, and/or U.S. Latino/a. May be repeated for credit when topics vary.

3813 Topics in Native American Literature
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Critical study of a topic in Native American/Indigenous literatures focusing on an author, a genre, a theme, or on traditional and oral literature. May be repeated for credit when topics vary.

4013 Restoration and Eighteenth-Century Literature
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Selected readings in the fiction, drama, poetry, and prose of the British literature of the late 17th century and the 18th century.

4023 Romantic Literature
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Selected readings in the fiction, poetry, and prose of the British Romantic period.

4033 Literary Modes and Genres
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Intensive study of a single mode or genre such as comedy, tragedy, allegory, satire, epic, or a type of nonfiction such as biography. May be repeated for credit when topics vary.

4053 Modern British and American Poetry
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
An intensive study of major modern poets.

4063 Medieval English Literature
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Study of the major English writings from the Anglo-Saxon and Middle English periods (excluding Chaucer), with special emphasis on *Beowulf* and Chaucer's contemporaries. Some works in translation, but original texts whenever possible.

4113 Renaissance Literature
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Selected readings from major writers of the 16th and early 17th centuries (excluding Shakespeare).

4143 Victorian Literature
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Selected readings in the fiction, poetry, and nonfiction prose of major Victorian writers.

4393 Feminist Theory of Literature
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Critical study of feminist theory and the relationship of gender to literature. Selected readings from major feminist theorists in connection with the study of literary texts.

4423 Studies in Advanced Linguistics
(3-0) 3 hours credit. Prerequisite: ENG 3343 or LNG 4013.
Specialized study of one or more areas of linguistic research, including historical linguistics, sociolinguistics, dialectology, linguistics for literary analysis, or languages in contact. May be repeated for credit when topics vary.

4433 Advanced Professional Writing
(3-0) 3 hours credit. Prerequisite: ENG 2413 or the equivalent.
Development of complex documents such as manuals, proposals, grants, environmental impact studies, newsletters, and brochures. Extensive practice in writing, layout and design, and preparation of professional documents. May be repeated for credit when topics vary.

4523 Writer's Workshop: Advanced Fiction Writing
(3-0) 3 hours credit. Prerequisite: Consent of instructor (writing portfolio required).
Designed for students who have demonstrated potential as fiction writers. May be repeated for credit, but not more than 12 semester credit hours of ENG 4523 and/or ENG 4533 will apply to a bachelor's degree, and not more than 6 semester credit hours will apply toward the English major.

4533 Writer's Workshop: Advanced Poetry Writing
(3-0) 3 hours credit. Prerequisite: Consent of instructor (writing portfolio required).
Designed for students who have demonstrated potential as poets. May be repeated for credit, but not more than 12 semester credit hours of ENG 4533 and/or ENG 4523 will apply to a bachelor's degree, and not more than 6 semester credit hours will apply toward the English major.

4613 Topics in Mexican American Literature
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Critical study of a topic in Mexican American literature: author, genre, or theme. May be repeated for credit when topics vary.

4713 Topics in African American Literature
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Critical study of a topic in African American literature: author, genre, or theme. May be repeated for credit when topics vary.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933 Internship
3 hours credit. Prerequisite: Consent of instructor.
Supervised experience relevant to English. May be repeated once for credit, but not more than 3 semester credit hours will apply to the English major.

4953 Special Studies in English
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4973 Seminar for English Majors
(3-0) 3 hours credit. Prerequisite: 12 upper-division semester credit hours in English.
This undergraduate seminar, limited to English majors in their senior year, offers the opportunity to study a genre, author, or period in English or American literature. Content varies with each instructor. May be repeated once for credit when topics vary.

4991-3 Honors Thesis
1 to 3 hours credit. Prerequisites: Consent of instructor and Department Scholarship and Honors Committee; enrollment in or completion of ENG 4973.
Supervised research and preparation of an Honors Thesis for the purpose of earning English Honors. May be repeated once with advisor approval.

English as a Second Language (ESL)

Department of Bicultural-Bilingual Studies, College of Education and Human Development

3003 Language and Schooling
(3-0) 3 hours credit.
Study of the principles of linguistics as they relate to language in education, particularly for bilingual and second language learners. Attention is given to linguistics approaches to development of oral language and literacy skills.

3023 Second Language Teaching and Learning in EC–6
(3-0) 3 hours credit.
Application of principles of second language acquisition to promote content-area learning and academic-language development for English language learning (ELL) students in Pre-K to sixth-grade classrooms. Particular attention on methods and strategies for planning, implementing and assessing effective instruction for ELL students. Up to 20 hours of directed field experience are required. (Credit cannot be earned for both ESL 3023 and ABL 3023.)

3033 Foundations of English as a Second Language
(3-0) 3 hours credit.
Historical, theoretical, and policy foundations of ESL education. Application of research findings to planning and implementing effective programs for ESL students. Use and interpretation of formal and informal assessments to plan and adapt instruction for ESL students. Strategies for creating effective multicultural/multilingual learning environments. Advocating for ESL students and facilitating family and community involvement.

3053 Literacy in a Second Language
(3-0) 3 hours credit.
Application of theories of second language acquisition to promote ESL students' literacy development. Methods, strategies, and techniques for designing, implementing, and assessing effective reading and writing lessons for ESL students. Design and evaluation of appropriate materials for literacy instruction. Up to 20 hours of directed field experience are required. (Credit cannot be earned for both ESL 3053 and ABL 3053.)

3063 Second Language Acquisition in Early Adolescence
(3-0) 3 hours credit.
Application of principles of second language acquisition to promote content-area learning and academic-language development for English language learning (ELL) students in grades 4 and higher. Particular attention is placed on methods and strategies for planning, implementing and assessing effective instruction for adolescent ELL students. Up to 20 hours of directed field experience are required.

4003 Approaches to Second Language Teaching
(3-0) 3 hours credit. Prerequisite: Completion of all requirements for admission to the Teacher Certification Program or permission of instructor.
Study of methods, instructional strategies and materials for teaching ESL students with beginning to advanced levels of proficiency. Focus on planning, implementing, and assessing developmentally appropriate ESL instruction in learner-centered classrooms. Particular focus on strategies and techniques for promoting students' communicative competence in English. Up to 20 hours of directed field experience are required.

4013 Principles of First and Second Language Acquisition
(3-0) 3 hours credit.
Study of first and second language acquisition. Application of this knowledge to promote students' language development in English and to promote teachers' abilities to assess language proficiencies.

4953 Special Studies in English as a Second Language
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. To apply credit earned in ESL 4953 toward a minor, consent of the academic advisor in the COEHD Advising and Certification Center is required.

English for International Students (EIS)

Department of Bicultural-Bilingual Studies, College of Education and Human Development

1063 ESL for International Students: Listening
(3-0) 3 hours credit.
Development of listening comprehension and related note-taking skills needed in academic settings.

1073 ESL for International Students: Communicating Effectively
(3-0) 3 hours credit.
Development of oral discourse, including oral presentation, small group discussion, and pronunciation needed in academic settings.

1083 Content-based Reading
(3-0) 3 hours credit.
Development of reading proficiency needed for reading in undergraduate courses. (Includes TSI preparation.)

1093 Content-based Writing
(3-0) 3 hours credit.
Development of writing proficiency required for undergraduate courses. (Includes TSI preparation.)

1163 Advanced Oral Communications
(3-0) 3 hours credit.
Development of oral proficiency skills required for students at the graduate level, including international teaching assistants.

1183 Advanced Reading Strategies
(3-0) 3 hours credit.
Development of reading proficiency required for specific areas of study at the graduate level.

1193 Advanced Writing Strategies
(3-0) 3 hours credit.
Development of writing proficiency required for specific areas of study at the graduate level.

Entrepreneurship (ENT)

Department of Entrepreneurship and Technology Management, College of Business

4123 Commercialization and Enterprise Planning
(3-0) 3 hours credit. Prerequisites: MGT 3003, MGT 3013, and a declared major in the College of Business or department approval.
This course offers students a step-by-step instruction in how to develop a business plan for commercialization or enterprise development. The students will learn to present and defend their plan as Venture Capitalists would expect from a pitch. The course emphasizes the plan components, format, marketing and financial projections.

4223 Managing the Entrepreneurial Team
(3-0) 3 hours credit. Prerequisites: MGT 3003, ENT 4123, and a declared major in the College of Business or department approval.
This course examines how to recruit, manage and lead an entrepreneurial team. Particular emphasis will be placed on improving students communications and collaboration skills in a cross-functional team context. Students will also explore evolving, collaborative approaches employed by companies to accelerate innovations by using customers, suppliers, partners and other organizations outside the four walls of a company.

4523 Microlending Entrepreneurial Startups
(3-0) 3 hours credit. Prerequisites: MGT 3003, ENT 4123, FIN 4333, and a declared major in the College of Business or department approval.
This course focuses on access to capital in the United States as it relates to the financing of startups and the role microlending has played in this financing. Discusses the history of microlending in the entrepreneurship environment, the microlending industry, and factors leading to success or failure of microlenders.

4623 Tools and Objectives of the Social Enterprise
(3-0) 3 hours credit. Prerequisites: MGT 3003, FIN 4333, ENT 4123, and a declared major in the College of Business or department approval.
This course investigates the distinctive characteristics of the social enterprise and social entrepreneurs. Examines the role of innovation, the for-profit and not-for-profit models of the social enterprise as well as the corporate structure known as the "B Corporation." Develops ability to evaluate, plan and manage a social enterprise.

4873 Entrepreneurship
(3-0) 3 hours credit. Prerequisites: MGT 3003, ENT 4123, and a declared major in the College of Business or department approval.
Examines how and why entrepreneurs develop and/or grow a business as facilitated by the objectives and resources of the entrepreneur. Topics include differences between a commercial and social enterprise, developing a strategy formulation, and the development of a sustainable competitive advantage in global and social enterprise. (Formerly MGT 4873. Credit cannot be earned for both ENT 4873 and MGT 4873.)

4883 Small Business Management
(3-0) 3 hours credit. Prerequisites: MKT 3013, ENT 4123, and a declared major in the College of Business or department approval.
Focuses on the start up and operation of small businesses. Examines the accounting, finance, management, and marketing functions as they pertain to entrepreneurial endeavors. Develops overall managerial awareness and analytical skills in small business problem solving. (Formerly MGT 4883. Credit cannot be earned for both ENT 4883 and MGT 4883.)

4903 Practicum in Small Business and Entrepreneurship
3 hours credit. Prerequisites: ENT 4123, FIN 4333, ENT 4873, ENT 4883, a declared major in the College of Business and permission from the instructor.
This practicum will allow students to gain valuable experience. Drawing on the resources of the Colleges of Business and Engineering, local businesses, and entrepreneurs, the practicum provides students with the opportunity to examine real-world business problems, and thus gain insight into the challenges of starting a small business. Students will select from specific business problems or projects and participate in the Center for Innovation and Technology Entrepreneurship business plan competition. (Formerly MGT 4903. Credit cannot be earned for both ENT 4903 and MGT 4903.)

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: ENT 4873 and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933 Internship in Entrepreneurship
3 hours credit. Prerequisites: ENT 4873 and 9 additional semester credit hours of Entrepreneurship (ENT) courses, a 3.0 overall grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for additional requirements and required forms.
The opportunity for entrepreneurial work experience. Requires a semester-long experience in private business or a not-for-profit enterprise and a written component. Opportunities and output requirements are developed in consultation with a faculty advisor and the Department Chair and require approval of both. Internship may be repeated once (for a total of 6 semester credit hours), provided the internships are with different organizations.

4951-3 Special Studies in Entrepreneurship
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisites: ENT 4873 and a declared major in the College of Business or department approval.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Environmental Science (ES)

Department of Biology, College of Sciences

NOTE: All Environmental Science (ES) courses used as prerequisites for other Environmental Science courses must be completed with a grade of "C–" or better.

2013 Introduction to Environmental Systems I [TCCN: BIOL 2306.]
(3-0) 3 hours credit.
An introduction to the biotic principles of man-machine-community interrelationships within the natural and built environments. General attention is given to the biotic concepts of growth, processes, and changes occurring in ecosystems and social structures. Emphasis on understanding system dynamics and their relation to public policy formulation and natural resource use. May apply toward the Level I Core Curriculum requirement in science.

2021 Introduction to Environmental Systems I Laboratory
(0-3) 1 hour credit. Concurrent enrollment in ES 2013 is recommended.
Qualitative and quantitative methods in the study of biotic environmental systems.

2023 Introduction to Environmental Systems II
(3-0) 3 hours credit. Prerequisite: ES 2013.
An introduction to the abiotic principles of man-machine-community interrelationships within the natural and built environments. General attention is given to the abiotic environmental factors including natural hazards (earthquakes, fires, volcanoes, landslides, and floods), pollution processes, energy resources, and changes occurring in ecosystems. Emphasis on understanding system dynamics and their relation to natural resource use.

2031 Introduction to Environmental Systems II Laboratory
(0-3) 1 hour credit. Concurrent enrollment in ES 2023 is recommended.
Qualitative and quantitative methods in the study of abiotic environmental systems.

3023 Society and Its Natural Resources
(3-0) 3 hours credit.
An in-depth analysis of humankind's dependency on the major natural resources of the earth such as water, air, soils, forests, grasslands, minerals, fuels, and wildlife, and the environmental problems that arise through societal mismanagement.

3033 Environmental Ecology
(3-0) 3 hours credit. Prerequisites: BIO 1404, ES 2013 and ES 2023, or equivalents.
Examination of the interactions of biotic and abiotic systems, including interactions of plants, animals, and the environment. (Formerly ES 3034. Credit cannot be earned for more than one of the following: ES 3033, ES 3034 or BIO 3283.)

3042 Environmental Ecology Laboratory
(0-6) 2 hours credit. Prerequisites: BIO 1404, ES 2013, ES 2021, ES 2023, and ES 2031, or equivalents. Concurrent enrollment in ES 3033 is recommended.
A field-oriented course emphasizing modern ecological techniques, including examinations of plant and animal populations and measurement of selected chemical and physical parameters. (Credit cannot be earned for both ES 3042 and BIO 3292.)

3053 Environmental Remediation
(3-0) 3 hours credit. Prerequisites: CHE 2603, ES 2013, and ES 2023, or equivalents.
This course will focus on the fundamentals associated with environmental remediation in relation to the overall environmental quality and protection. Topics covered include contaminant fate and transport; physical, chemical, and biological processes/characteristics of the air, soil, and water; remediation/ restoration methods; environmental monitoring; environmental assessments; environmental regulations; and water/wastewater treatment. (Formerly ES 3054. Credit cannot be earned for both ES 3053 and ES 3054.)

3061 Environmental Remediation Laboratory
(0-3) 1 hour credit. Prerequisites: CHE 2603, CHE 2612, ES 2013, and ES 2023, or equivalents. Concurrent enrollment in ES 3053 is recommended.
This laboratory and field-based course will provide hands-on experience in environmental remediation that will focus on regulatory aspects of assessing environmental contamination, technologies/strategies used to remediate, and current literature research investigations into remediation.

3103 Environmental Microbiology
(3-0) 3 hours credit. Prerequisites: BIO 1404, CHE 2603, ES 2013, and ES 2023, or equivalents, or consent of instructor.
This course will survey environmental microbiology and will emphasize microbial interactions in terrestrial and aquatic environments as well as the fate of microbial pathogens. Topics covered include microbial environments, detection of bacteria and their activities in the environment, microbial biogeochemical cycling, bioremediation of organic and inorganic pollutants, and water quality. (Formerly ES 3104. Credit cannot be earned for more than one of the following: ES 3103, ES 3104 or BIO 3713.)

3112 Environmental Microbiology Laboratory
(0-6) 2 hours credit. Prerequisites: CHE 2603, CHE 2612, ES 2013, and ES 2023, or equivalents. Concurrent enrollment in ES 3103 is recommended.
This laboratory-based course will provide advanced techniques and methods in the environmental microbiology field, including various natural habitats. Special consideration is given to application of genetically engineering microorganisms for solving environmental problems. (Credit cannot be earned for both ES 3112 and BIO 3722.)

3203 Environmental Law
(3-0) 3 hours credit.
Present-day environmental enabling acts and regulations will be covered, with emphasis on federal acts, such as the National Environmental Policy Act, Clean Water Act, Resource Conservation and Recovery Act, and associated regulations.

4003 Environmental Chemistry and Toxicology
(3-0) 3 hours credit. Prerequisites: CHE 2603, ES 2013, and ES 2023, or equivalents.
Chemical principles applied to the understanding of processes in aquatic and environmental systems. Emphasis will be on physical, chemical, and biological processes in treatment and processing of hazardous waste materials.

4011 Environmental Chemistry and Toxicology Laboratory
(0-3) 1 hour credit. Prerequisites: CHE 2603, ES 2013, and ES 2023, or equivalents. Concurrent enrollment in ES 4003 is recommended.
Laboratory principles applied to the understanding of processes in aquatic and environmental systems. Emphasis will be on physical, chemical, and biological processes in treatment and processing of hazardous wastes materials.

4103 Global Change
(3-0) 3 hours credit. Prerequisites: BIO 1404, CHE 2603, ES 2013, and ES 2023, or equivalents.
Changes in the global distribution of plants and animals and the causes of the changes will be examined. Factors that are apparently coupled to changes in these distributions will be examined including, but not limited to, atmospheric composition change and temperature change. Additionally, examination of the impact of humans and their activities on the environment: their effect on aquatic, marine, and terrestrial plant, animal, and human resources. (Formerly ES 4104. Credit cannot be earned for both ES 4103 and ES 4104.)

4193 Field-Based Inquiry
(2-2) 3 hours credit. Prerequisite: Completion of mathematics and Level II science core curriculum requirements.
This course will enable future teachers to integrate fieldwork and inquiry into their curriculum. Observational and descriptive skills from a field-based research perspective will be emphasized. Mapping techniques will include pace-and-compass mapping, plane table mapping, and an introduction to Global Positioning System (GPS) and Geographic Information Systems (GIS) mapping. An interdisciplinary approach that explores Earth system interactions will be highlighted. Students will develop and carry out a research project based upon fieldwork. Students in this course will spend significant time outdoors traveling over rough terrain. (Same as GEO 4193. Credit cannot be earned for both ES 4193 and GEO 4193.)

4203 Environmental Assessment
(3-0) 3 hours credit. Prerequisites: ES 2013 and ES 2023, or equivalents.
Examination of environmental problems as well as their possible impact and potential solutions will be presented and explored from a variety of areas including soil, air, water, coastal and marine systems.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4951-3 Special Studies in Environmental Science
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Facility and Property Management (FM)

Department of Finance, College of Business

4213 Power and Air Conditioning
(3-0) 3 hours credit. Prerequisite: IS 4033 with a grade of "C–" or better or consent of instructor.
The purpose of this class will be to explore the electrical power, air conditioning, and fire suppressant requirements of a data center. Electrical grids, standby generators, and uninterruptable power supplies will be discussed. The course explores the various aspects of power quality, interruption of service, voltage flicker and control, voltage swells and sags and power surges. Air conditioning requirements and methods will also be included. Fire suppressant techniques will also be part of the class. A comprehensive project involving the design of the data center to include these three major issues will be part of the class.

4233 Sport and Event Facility Management
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MGT 3013.
This course provides an overview of managing a facility used for sports, conventions, and entertainment events. Some of the topics are conducting feasibility studies, market research, facility design and layout, event bidding, quality assurance, risk management, and event staffing. Real Estate Finance and Development majors cannot take SET 4233 for the degree requirements but can take FM 4233. (Same as SET 4233. Credit cannot be earned for both FM 4233 and SET 4233.)

4303 Facility and Property Management Policies and Procedures
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MGT 3013.
The implementation of professional policies, standards, practices, and procedures for the leasing, operation and maintenance of facilities. Topics include the facility management profession, leasing, and the acquisition, installation, operation, maintenance and disposition of building systems, furniture and fixtures, and grounds and exterior elements. (Formerly MGT 4303. Credit cannot be earned for both FM 4303 and MGT 4303.)

4313 Facility and Property Management Practices
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MGT 3013.
The application of management practices to the operation of facilities. Topics include the study of human and environmental factors, building safety, building audits, building technology, emergency preparedness, the use and changing uses of facilities, and continuous quality improvement. (Formerly MGT 4313. Credit cannot be earned for both FM 4313 and MGT 4313.)

Finance (FIN)

Department of Finance, College of Business

2003 Personal Finance in American Society [TCCN: HECO 1307.]
(3-0) 3 hours credit.
Examines various aspects of consumer finance choices in a market economy, including broad coverage of the following personal financial decisions: assets such as bank accounts; major purchases such as housing and vehicles; management of credit cards and consumer loans; budgeting; selecting life, health, and property insurance; investing in stocks, bonds, and mutual funds; and retirement, estate, and tax planning. This course may not be applied toward a major in finance but may be counted as a free elective for College of Business students.

3003 Survey of Finance
(3-0) 3 hours credit. Prerequisite: ACC 2003 or ACC 2013 or the equivalent.
A basic survey course focusing on three aspects of finance: the financial system, corporate finance, and investments. The financial environment will be described along with how the financial system interacts with the economy. Business decisions, efficient allocation of financial resources, and fundamentals of investment will be introduced. This course may not be applied toward a major nor a minor in finance but may be counted as an elective for other College of Business students.

3014 Principles of Business Finance
(4-0) 4 hours credit. Prerequisites: MAT 1033, MS 1023, ACC 2013, and ECO 2013 or their equivalents. Corequisite: ACC 2033.
Introduction to financial management techniques. Topics may include time value of money, valuation of stocks and bonds, risk and return, capital budgeting analysis, financing alternatives, financial planning, ratio analysis, short-term financial decisions, working capital, sources and uses of funds, capital structure, dividend policy, lease analysis, options, international financial management, and other topics associated with successful business finance decisions in an internationally competitive environment. One-hour laboratory included. (Formerly FIN 3013. Credit cannot be earned for both FIN 3014 and FIN 3013.)

3023 Intermediate Corporate Finance
(3-0) 3 hours credit. Prerequisites: FIN 3014, or the equivalent, with a grade of "C–" or better and successful completion of the Finance Assessment of Competency Test (FACT). Corequisite: ACC 3023.
Advanced discussion of subjects essential to corporate financial management, including short-term credit policies, capital budgeting, risk, sources of long-term funds, financial leverage, and the cost of capital. Special topics such as mergers, bankruptcy, and reorganization may also be considered.

3033 Principles of Investment
(3-0) 3 hours credit. Prerequisite: FIN 3014, or the equivalent, with a grade of "C–" or better.
Introduction to securities markets; analysis of money market instruments, mutual funds, stocks, bonds, options, futures, and other securities; investment management in the light of tax considerations, timing, and selected portfolio needs.

3313 Money and Banking
(3-0) 3 hours credit. Prerequisite: ECO 2013 or the equivalent.
Elements of monetary theory; relationships between money, prices, production, and employment; factors determining money supply; and operation of capital markets with reference to the United States.

3413 Introduction to Financial Markets
(3-0) 3 hours credit. Prerequisite: FIN 3313 or the equivalent.
This course addresses the development of financial markets and market pricing of debt, equity, and foreign exchange. Special emphasis is placed on current and historical events to discuss these topics.

3423 Security Analysis
(3-0) 3 hours credit. Prerequisite: FIN 3033 or the equivalent.
Advanced financial analysis; examination of statements and supplementary data of industrial, commercial, financial intermediary, and public enterprises; preparation of reports relevant to achieving an understanding of financial management policies.

3433 Principles of Real Estate
(3-0) 3 hours credit.
General introduction to the subject matter and terminology of real estate as a business and profession; federal, state, and local laws governing housing discrimination, equal credit opportunity, and community reinvestment.

3443 Technical Analysis
(3-0) 3 hours credit. Prerequisite: FIN 3014 with a grade of "C–" or better.
Introduction to technical analysis of financial markets. Topics include trend analysis, charting techniques, measures of market sentiment, Dow theory, and cycle theories. Security selection, trading system management, and risk management are explored.

4323 Financial Institutions Management
(3-0) 3 hours credit. Prerequisite: FIN 3014 with a grade of "C–" or better.
Direction and coordination of the various functions of the financial firm, including money position, lending, and capital management. Emphasis on asset and liability management in a changing environment of regulation, competition, and financial intermediation.

4333 Business Finance for Entrepreneurs
(3-0) 3 hours credit. Prerequisite: FIN 3014 with a grade of "C–" or better.
Development of financial management techniques for developing businesses. Topics include cash flow projections, managing cash and working capital, estimating cost of capital, project evaluation, issues of limited diversification, and nontraditional sources of funds as well as growth and exit strategies.

4413 Trading and Analysis of Financial Instruments
(3-0) 3 hours credit. Prerequisites: FIN 3033 and consent of instructor.
Theoretical concepts in investments analysis and trading applications with real-time and historical data are developed. Topics include technical and fundamental analysis of equity portfolios, fixed income valuation, and credit risk analysis. Computer applications include Bloomberg Professional® software.

4423 Investment Portfolio Management
(3-0) 3 hours credit. Prerequisites: MGT 3003 and FIN 3033 or the equivalent.
Application of investment principles to management of investment portfolios of individuals and institutions; consideration of business cycles, investment constraints, portfolio construction, investment timing, and securities selection. Analysis of derivative securities and their use in the portfolio context.

4523 Introduction to Risk Management
(3-0) 3 hours credit. Prerequisites: MGT 3003 and FIN 3014 or consent of instructor.
Analysis of risk management tools as an integral part of corporate financial decisions; alternatives for spreading risk such as insurance, retention funds, and external funds.

4613 Introduction to International Finance
(3-0) 3 hours credit. Prerequisites: MGT 3003 and FIN 3014 or the equivalent.
Study of underlying forces in international financial relations and the unique problems of international trade, investments, and operations; examination of multinational business finance and its economic, legal, and political dimensions.

4713 Mortgage Banking and Real Estate Finance
(3-0) 3 hours credit. Prerequisites: MGT 3003, FIN 3014, and FIN 3433, or consent of instructor.
Planning, structure, and analysis of real estate financing from the viewpoints of both the users and suppliers of funds; examination of various techniques and legal instruments; institutional constraints and their effects on real estate lending activities; and federal, state, and local laws governing housing discrimination, equal credit opportunity, and community reinvestment.

4723 Principles of Real Estate Investment
(3-0) 3 hours credit. Prerequisites: MGT 3003, FIN 3014, and FIN 3433, or consent of instructor.
Analysis of real estate investment alternatives; feasibility and site analysis; tax considerations; income and expense analysis; discounted cash flow analysis; profitability measurement; and forms of ownership.

4733 Principles of Sustainable Real Estate Development
(3-0) 3 hours credit. Prerequisites: MGT 3003, FIN 3014, FIN 3433, and FIN 4713 or FIN 4723, or consent of instructor.
The examination of the principles involved in creating value through the real estate development process. Economic, regulatory, planning, financing, management and disposition issues are considered in the marketing and financial analyses of development prospects. (Same as RFD 4733. Credit cannot be earned for both FIN 4733 and RFD 4733. Finance majors cannot take RFD 4733 as an upper-division finance elective.)

4813 Property-Liability Insurance Finance
(3-0) 3 hours credit. Prerequisites: MGT 3003 and FIN 3014 or the equivalent.
Analysis and management of risk and insurance, including the insurance contract, property insurance, liability insurance, business insurance, the insurance agency, financial structure and management of property-liability companies, and contemporary problems of property-liability insurance.

4823 Life and Health Insurance Finance
(3-0) 3 hours credit. Prerequisites: MGT 3003 and FIN 3014 or the equivalent.
Philosophy of the life risk is developed, as well as an understanding of the special character of life and health insurance, human life value, the customary and special uses of life insurance, and the history of life insurance companies. Life, health, and disability insurance contracts are investigated in addition to term and whole life insurance, agency structure, and current issues of life and health insurance.

4853 Real Estate Appraisal
(3-0) 3 hours credit. Prerequisites: MGT 3003, FIN 3014, and FIN 3433, their equivalents, or consent of instructor.
Functions and methods of property valuation, including comparable sales analysis, cost depreciation analysis, and income capitalization; residential and income property appraisal techniques and reporting. (Same as RFD 4853. Credit cannot be earned for both FIN 4853 and RFD 4853. Finance majors cannot take RFD 4853 as an upper-division finance elective.)

4873 Computer Modeling of Financial Applications
(3-0) 3 hours credit. Prerequisites: MGT 3003, IS 3003, and FIN 3014 or their equivalents.
Provides the opportunity to develop computer modeling skills and techniques for analyzing financial situations encountered in business, including the analysis of financial statements, forecasting, capital budgeting, and principles of investment analysis of securities. Financial issues involving uncertainty are examined.

4893 Cases and Problems in Finance
(3-0) 3 hours credit. Prerequisites: FIN 3023, FIN 3033, FIN 3313, ACC 3023, senior standing, and 3 hours of additional finance electives. Students are also required to meet all University regulations related to good academic standing and maintain a minimum grade point average of 2.0 in all courses, and in UTSA College of Business courses, and in all courses for the major. Approval is obtained in the College of Business Undergraduate Advising Center.
Integration of financial concepts and financial tools to enable strategic financial decision making in a wide variety of situations. Topics include corporate finance, investments, international finance, risk management, and other aspects of finance.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933 Internship in Finance
3 hours credit. Prerequisites: MGT 3003, 9 semester credit hours of upper-division finance courses, an overall 2.5 grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms.
The opportunity for professional work experience in research of financial operations, including real estate and insurance, and may be undertaken in either private business or a public agency. Opportunities are developed in consultation with the faculty advisor and Department Chair and require approval of both. Internship may be repeated once (for a total of 6 semester credit hours) provided the internships are with different organizations, but only 3 hours may count toward the 21 hours of finance required for the major.

4951-3 Special Studies in Finance
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisites: MGT 3003 and consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Thesis
3 hours credit. Prerequisite: MGT 3003. Enrollment limited to students applying for Honors in Finance (see page 40).
Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval.

Foreign Languages (FL)

Department of Modern Languages and Literatures, College of Liberal and Fine Arts

1034,8 Beginning Language Study Abroad
4 or 8 hours credit. Prerequisite: Consent of instructor.
Opportunity to begin developing oral and written communication skills in the target language, along with enhanced comprehension skills in listening and reading. Linguistic and cultural immersion. May be repeated up to 8 semester credit hours in each language.

1044 Individualized Instruction in Basic Language
4 hours credit. Prerequisite: Consent of instructor.
Opportunity to develop basic oral and written communication skills in the target language, along with enhanced comprehension skills in listening and reading. Generally restricted to special projects or languages not regularly offered as organized classes. May be repeated up to 8 semester credit hours in each language.

2023 Culture and Communication in a Foreign Language
(3-0) 3 hours credit.
A brief overview of history, geography, worldview, and customs common in the target culture. Use of some target culture materials. Opportunity to develop basic oral and written communication skills in the language. May be repeated for credit when language varies.

2033,6 Intermediate Language Study Abroad
3 or 6 hours credit. Prerequisites: Consent of instructor and 1008, 1024, or the equivalent in the selected foreign language.
Opportunity to develop intermediate-level oral and written communication skills in the target language, along with increased comprehension skills in listening and reading. Linguistic and cultural immersion. May be repeated up to 6 semester credit hours in each language.

2043 Individualized Instruction in Intermediate-Level Language
3 hours credit. Prerequisites: Consent of instructor and 1008, 1024, or the equivalent in the selected foreign language.
Opportunity to develop intermediate-level oral and written communication skills in the target language, along with increased comprehension skills in listening and reading. Generally restricted to special projects or languages not regularly offered as organized classes. May be repeated up to 6 semester credit hours in each language.

3003 Introduction to Translation
(3-0) 3 hours credit. Prerequisites: At least four courses of any single foreign language.
Principles of translation with practice in translating brief documents of a general nature. May be repeated for credit when language varies.

3013 Translation for the Language Specialist
(3-0) 3 hours credit. Prerequisite: At least one course at the 3000 level in the selected foreign language.
The language-related and cultural issues involved in translation and interpretation. Practice in translating documents from selected professional areas: business, health care, law, technology, or the arts. May be repeated for credit when topics/languages vary.

3033,6 Advanced Language Study Abroad
3 or 6 hours credit. Prerequisites: Consent of instructor and 2006, 2023, or the equivalent in the selected foreign language.
Opportunity to develop advanced-level oral and written communication skills in the target language, along with enhanced comprehension skills in listening and reading. Linguistic and cultural immersion. May be repeated up to 6 semester credit hours in each language.

3043 Individualized Instruction in Advanced-Level Language
3 hours credit. Prerequisites: Consent of instructor and 2006, 2023, or the equivalent in the selected foreign language.
Opportunity to develop advanced-level oral and written communication skills in the target language, along with enhanced comprehension skills in listening and reading. Generally restricted to special projects or languages not regularly offered as organized classes. May be repeated up to 6 semester credit hours in each language.

3101 Languages Across the Curriculum
1 hour credit. Prerequisite: Consent of instructor.
Online add-on course offering a concurrent language component for courses in other disciplines, such as art, anthropology, history, humanities, music and political science. May be repeated for credit when topics vary.

4013 Cross-Cultural Communication and Foreign Languages
(3-0) 3 hours credit.
Study of cross-cultural communication research in specific language communities and its application to effective interaction with speakers of a variety of foreign languages. Selected applications and comparisons according to sociolinguistic norms, semantic variation, and nonverbal language, relevant to the most numerous language communities in the United States and abroad. Material from psychology, sociology, communication, and other related fields.

4243 Foreign Language Instruction
(3-0) 3 hours credit. Prerequisite: 2023 or an equivalent in a foreign language.
A study of second-language-acquisition theories. Emphasis on instructional methodology as it relates to foreign languages and cultures.

4933 Internship
3 hours credit. Prerequisite: Permission of Department Chair.
Supervised experience in a setting that provides the opportunity to integrate theory and practice in language usage. May be repeated once for credit.

4953 Special Projects
3 hours credit. Prerequisite: Permission of Department Chair.
Opportunity to apply advanced-level oral and written language skills in a research project. This course is especially designed as the Signature Experience for language majors. May be repeated up to 6 semester credit hours in each language.

French (FRN)

Department of Modern Languages and Literatures, College of Liberal and Fine Arts

1014 Elementary French I [TCCN: FREN 1411.]
(3-2) 4 hours credit.
Fundamentals of French offering the opportunity to develop listening, speaking, reading, and writing skills. Emphasis on listening and speaking. Introduction to French culture.

1024 Elementary French II [TCCN: FREN 1412.]
(3-2) 4 hours credit. Prerequisite: FRN 1014, the equivalent, an appropriate placement test score, or consent of instructor.
Fundamentals of French offering the opportunity to develop listening, speaking, reading, and writing skills. Further study of French culture.

2013 Intermediate French I [TCCN: FREN 2311.]
(3-1) 3 hours credit. Prerequisite: FRN 1024, the equivalent, an appropriate placement test score, or consent of instructor.
Continued opportunity to develop listening, reading, speaking, and writing skills. Grammar review and further study of French culture.

2023 Intermediate French II [TCCN: FREN 2312.]
(3-1) 3 hours credit. Prerequisite: FRN 2013, the equivalent, an appropriate placement test score, or consent of instructor.
Continued opportunity to develop listening, reading, speaking, and writing skills. Grammar review and further study of French culture.

2333 French Literature in English Translation [TCCN: FREN 2303.]
(3-0) 3 hours credit.
Major works of French literature across time, genres, and movements. (Formerly FRN 3333. Credit cannot be earned for both FRN 2333 and FRN 3333.)

3023 Advanced Language Skills
(3-0) 3 hours credit. Prerequisite: FRN 2023 or consent of instructor.
Development of oral and written language skills using contemporary readings, media, and oral discourse. Emphasis on increasing fluency through vocabulary expansion activities and selective grammar review. May be repeated for credit when topics vary.

3053 Business French
(3-0) 3 hours credit. Prerequisite: FRN 2023 or consent of instructor.
Introduction to the basic context of the French economy and business world, with emphasis on development of practical language skills to deal with matters such as commercial correspondence, documents, reports, telecommunications, and conferences. Attention to vocabulary and style specific to French business. Practice in translation on business-related topics.

3413 Survey of French Literature and Culture
(3-0) 3 hours credit. Prerequisite: FRN 2023 or consent of instructor.
Selections from French literature and culture studied as reflections and interpretations of central movements in French cultural history. Introduction to concepts of style, genre, and period. May be repeated for credit when topics vary.

4003 Topics in French Literature
(3-0) 3 hours credit. Prerequisite: FRN 2023 or consent of instructor.
Focus on a specific area of French literature, from the medieval period through the 21st century. Selected texts are studied as examples of representative movements, genres, or authors in French literary history. May be repeated for credit when topics vary.

4213 Topics in French Culture and Linguistics
(3-0) 3 hours credit. Prerequisite: FRN 2023 or consent of instructor.
Selected topics of cultural history or linguistics from medieval period through the 21st century. May be repeated for credit when topics vary.

4913 Independent Study
3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933 Internship in French
3 hours credit. Prerequisite: Permission of Department Chair.
Supervised experience in a setting that provides the opportunity to integrate theory and practice in language usage. May be repeated once for credit.

4953 Special Studies in French
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Research
3 hours credit. Prerequisite: Consent of the undergraduate advisor.
Supervised research and preparation of an honors thesis. May be repeated once for credit, with approval.

General Business Administration (GBA)

College of Business

2013 Social and Ethical Issues in Business
(3-0) 3 hours credit.
A study of the social and ethical responsibilities of business organizations and of the people who work in those organizations.

4011-3 Seminar in Leadership
(1-0, 2-0, 3-0) 1, 2, or 3 hours credit. Prerequisite: MGT 3003.
A seminar that engages students in a discussion of leadership and responsibility in business and other organizations.

4951-3 Special Studies in General Business Administration
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisites: MGT 3003 and consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Generating Educational Excellence in Mathematics and Science: GEEMS (GEM)

Department of Mathematics, College of Sciences

1011 GEEMS Mathematics/Science I
(1-2) 1 hour credit.
This course introduces students to the prospect of mathematics and science secondary teaching as a career choice through hands-on experiences observing and teaching in an elementary classroom. Students will work in teams with an exemplary elementary teacher at one of the local school districts participating in mathematics and science classes. Class activities will emphasize the qualities of good mathematics and science teaching, including standards-based instruction and the integration of resources into effective class planning. Field-based experiences required. Restricted course; GEEMS Office approval required for registration. (Formerly UTE 1011. Credit cannot be earned for both GEM 1011 and UTE 1011.)

1021 GEEMS Mathematics/Science II
(1-2) 1 hour credit. Prerequisite: GEM 1011.
Builds on the teaching practices, lesson plan design, and instructional models used in GEM 1011, but in a middle school setting. Students become familiar with the reform movements in the middle school concept and philosophy. Through class activities and observations of middle school mathematics and science teachers, students identify the instructional and management strategies and assessment techniques appropriate to early adolescence. Students work in teams with an exemplary middle school teacher to design and deliver lessons appropriate to middle school students. Field-based experiences required. Restricted course; GEEMS Office approval required for registration. (Formerly UTE 1021. Credit cannot be earned for both GEM 1021 and UTE 1021.)

1031 GEEMS Mathematics/Science III
(1-2) 1 hour credit. Prerequisite: GEM 1021.
Builds on the teaching practices, lesson plan design, and instructional models used in GEM 1021, but in a high school setting. Students become familiar with the reform movements in the high school concept and philosophy. Through class activities and observations of high school mathematics and science teachers, students identify the instructional and management strategies and assessment techniques appropriate to adolescence. Students work in teams with an exemplary high school teacher to design and deliver lessons appropriate to high school students. Field-based experiences required. Restricted course; GEEMS Office approval required for registration. (Formerly UTE 1031. Credit cannot be earned for both GEM 1031 and UTE 1031.)

Geography (GRG)

Department of Political Science and Geography, College of Liberal and Fine Arts

1013 Fundamentals of Geography [TCCN: GEOG 1300.]
(3-0) 3 hours credit.
Introduction to the study of physical and cultural features of the earth and their distributions, causes, and consequences to humans. Topics include landforms, climate, natural resources, population, human behavior in spatial context, economic growth, urbanization, and political systems.

1023 World Regional Geography [TCCN: GEOG 1303.]
(3-0) 3 hours credit.
Study of the world's regions, focusing on salient physical, cultural, economic, and political characteristics, including physiography, climate, natural resources, population, economic structure and development, globalization, urban growth, cultural institutions, and political structure. Regions include North America, Latin America, Europe, Middle East/North Africa, Sub-Saharan Africa, South Asia, Japan, China and East Asia, the Russian Federation, and Australasia.

2613 Physical Geography [TCCN: GEOG 1301.]
(3-0) 3 hours credit.
Study of the earth's major landforms and climatic patterns, the processes giving use to these patterns, and their relationship to human activity. Includes the geomorphology of volcanoes, glaciers, coral reefs, mountains, caves, dunes, and plate tectonics.

2623 Human Geography [TCCN: GEOG 1302.]
(3-0) 3 hours credit.
Study of the relationship between the social and spatial aspects of human behavior. Topics include stereotyping of people and places, human proxemics and territoriality, perception of places, environmental perception, spatial diffusion, and human migration.

2633 Introduction to Geographic Methods
(3-0) 3 hours credit.
Broad survey of geographic research methods. May include map interpretation, basic field techniques, archival research methods, geographic information systems, computer cartography, digital remote sensing, and spatial statistics. Students will be exposed to ways geographic data is used to address social and environmental problems and will receive some hands-on experience with modern computer-based geographic technologies. This course is strongly recommended before upper-division courses in geographic techniques (GIS, computer cartography, spatial analysis, or remote sensing).

3113 Geography of the United States and Canada
(3-0) 3 hours credit.
Study of selected geographic aspects of the major regions of the United States and Canada, emphasizing current social and economic issues in these regions. From a contextualizing treatment of the continent's physical geographies, the course proceeds to the social geographies of the major ethnic groups, showing how the historical management and appropriation of space has been integral to determining the character of the contemporary social hierarchy at the national level. The course proceeds through analyses of social and economic patterns of development, including the national and internal geographical patterns of North American cities.

3123 Geography of Latin America
(3-0) 3 hours credit.
Beginning with basic aspects of the physical environment, the course examines the social geographies of pre-colonial and colonial Latin America. The structural factors of Latin American economies and cultural institutions are then examined. Emphasis is on their spatial manifestations and their role in producing a Latin America often termed "underdeveloped." The emerging role of Latin America in the democratic world order of the post-1990s is also examined.

3133 Geography of Europe
(3-0) 3 hours credit.
Survey of the European culture area, including Western Europe, Eastern Europe, and the Baltics. Discussion of historical, urban, political, ethnic, and economic forces shaping the 21st-century geography of Europe, including the European Union and the Russian Federation.

3143 Geography of Mexico
(3-0) 3 hours credit.
Investigation of Mexico's physical and social geography, including climatic and geomorphologic influences, the historical imprint of the Amerindians and the Spanish, population growth and migration, urbanization, political reform, social and cultural change, agriculture and industry, trade liberalization and the impact of NAFTA. May include a field trip to Mexico.

3153 Geography of Texas
(3-0) 3 hours credit.
A topical and regional examination of the physical, cultural, and economic patterns of the state. Includes demographic characteristics, agriculture, mining, manufacturing, selected urban areas, and current social issues. May include a field trip to the nonmetropolitan hinterland of San Antonio.

3213 Cultural Geography
(3-0) 3 hours credit.
A thematic exploration of the nature and distribution of human culture hearths, population, folk culture, popular culture, agriculture, industrialization, languages, and religion. Topics are defined and examined in the context of their manifestations and influences as regions, cultural diffusion, ecology, cultural interaction, and landscapes.

3314 Introduction to Geographic Information Systems
(3-2) 4 hours credit.
An introductory course on the application of the computer to the acquisition, manipulation, analysis, and display of geographic data; overview of projection systems, data acquisition issues, and presentation techniques. Three lecture and two laboratory hours per week. (Formerly GRG 3313. Credit cannot be earned for both GRG 3314 and GRG 3313.)

3323 Spatial Analysis
(3-0) 3 hours credit.
Conceptualization, operationalization, and analysis of relationships in geography and the social sciences. Includes the scientific method, research design, sampling, interpretation of spatial patterns, statistics, and univariate and multivariate analysis. Involves use of computer software in the analysis and display of data.

3334 Advanced Geographic Information Systems
(3-2) 4 hours credit. Prerequisite: GRG 3314.
Advanced topics in the use of computer-based analysis of geographic information including data acquisition, modeling complex datasets, and an introduction to scripting to customize an industry-standard software package. (Formerly GRG 3333. Credit cannot be earned for both GRG 3334 and GRG 3333.)

3343 Analytical and Computer Cartography
(2-2) 3 hours credit.
The design, construction, production, and reproduction of maps using computer hardware and software. Topics may include cartographic theory, principles of visual communication, and the techniques of geographic visualization, including 3-D and 4-D modeling and animation.

3423 Geopolitics of Russia and Eurasia
(3-0) 3 hours credit.
Multidisciplinary introduction and regional study of the Russian Federation and the Eurasian realm, including the Caucasus, Central Asian nations, Afghanistan, and Mongolia. Both the geography and the politics of this area will be analyzed. Historical and contemporary geopolitical topics include nation-building, regional civilizations, revolution, terrorism, the 19th-century "Great Game," the rise of the USSR, and the current transition of the Russian Federation to an uncertain future. (Same as POL 3423. Credit cannot be earned for both GRG 3423 and POL 3423.)

3433 The Geography and Politics of the Asian Rim
(3-0) 3 hours credit.
An analysis of the states spanning from the Indian subcontinent through Indo-China to Japan and China. Examination of their physical and social geographies and the regional political dynamics prevalent in the modern era. Selected themes will include population dynamics, cultural hearths, immigration patterns, economic development, and regional integration.

3443 Medical Geography
(3-0) 3 hours credit.
The human ecology of health. Analysis of the cultural/environmental interactions that explain world patterns of disease, their diffusion and treatment.

3453 Population Geography
(3-0) 3 hours credit.
Study of the spatial dimensions of population distribution, growth, and mobility. Includes the historical and modern reasons for global patterns of population, the changes in birth and death rates over time, and levels of development as explained by the demographic transition and population policies. Special attention will be given to human migration theories, models, and case studies at the intra-urban, internal, and international levels. Global issues that are related to population growth and movement, such as political conflict and governance, disease, and immigration policy, will be covered.

3513 Urban Geography
(3-0) 3 hours credit.
A geographic examination of the environmental settings and impacts, history, structure, growth, area of influence, economic base, social structure, and culture of cities. Topics may include the physiography and climate of cities, preindustrial and industrial cities in history, urban land-use models and examples, factors that influence the growth and decline of cities, central place theory and the city's tributary region, the community economic base and the economic multiplier, social area analysis, and the city as a center of cultural diversity. Focus of the course may be local, national, or international.

3523 Introduction to Urban Planning
(3-0) 3 hours credit.
An introduction to the urban public policy, urban dynamics, selected problems, and the role of the master planning process in their management and solution. Issues and themes include poverty, public education, urban growth, municipal and regional government, energy and waste management, historic preservation and urban design, and relationships between transportation and land use.

3533 Geography of Economic Activity
(3-0) 3 hours credit.
Investigates the location of agricultural, industrial, retail and service activities, and transportation flows, through relevant theories and models. Includes case studies of agricultural land use around cities, the urban economic base, shift-share analysis, global impacts on the local economy, and central place principles such as threshold and range. Major focus is on the San Antonio region.

3613 Conservation of Resources
(3-0) 3 hours credit.
A survey of natural resources, environmental policies, global consumption patterns, and the competing values that affect them. Topics include agriculture, water resources, air pollution, waste disposal, land management, wildlife preservation, habitat conservation, biodiversity, energy production, urban sprawl, economic growth, and other selected components of built and natural systems.

3623 Geography of Natural Hazards
(3-0) 3 hours credit.
This course introduces students to the geophysical phenomena that are the root causes of natural disasters, as well as the social institutions and human geographies that exacerbate them. Hazards covered in this class may include earthquakes, tsunamis, volcanic eruptions, hurricanes, tornados, floods, drought, wildfire, and global climate.

3633 Geography of Development
(3-0) 3 hours credit.
Survey and analysis of economic growth and social change in different parts of the world, with an emphasis on less-developed countries. Topics may include the definition of development, the major theories of development and underdevelopment, the evolution of global inequalities, the impacts of population growth and migration, the role of agriculture, industry, and transportation in the development, and cultural imperialism and the rise of religious fundamentalism.

3643 Political Geography
(3-0) 3 hours credit.
Investigates the role of the political state in society and the evolution of state organization from classical times to the present. Topics may include centrifugal and centripetal forces, geopolitics, territorial morphology, boundaries, core areas, and emerging supranationalism.

3653 Geographic Perspectives on Women
(3-0) 3 hours credit.
The course studies the role of women in the spatial organizations of society. Topics may include analysis of gendered spaces, the importance of gender relations in shaping physical, social, and built environments, and the spatial-economic consequences of gender-based policies.

3713 Weather and Climate
(3-0) 3 hours credit.
Analysis of the elements and causes of daily weather, climatic classifications, and climate change. Study of world distributions and components of climate, with studies of air pressure, precipitation, air masses, optical phenomena, and wave cyclones. Regional attention to weather patterns, including tornadoes and hurricanes.

3723 Physiography
(3-0) 3 hours credit.
This course provides a study of landforms, the description and interpretation of relief features of the surface of the earth, and the processes and materials that form them and change them over time. Students will be introduced to the impacts of human intervention in landscape-shaping processes. Special emphasis will be placed on the landforms of the Southwestern United States.

3733 Urban and Regional Analysis
(3-0) 3 hours credit.
Applied models of urban and regional growth, structure, interaction, influence, and inequality over space, with emphasis on the United States. Stresses practical skills.

4313 Remote Sensing
(2-2) 3 hours credit. Prerequisite: GRG 2633 or GRG 3314 or equivalent.
Introduction to the use of electromagnetic energy to sense objects in the natural and built environment; interpretation and recognition of patterns detected by satellite and aircraft-borne sensors. Application of computer software to the analysis and interpretation of remotely-sensed information.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4923 Advanced Research Tutorial
3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor and the Department Chair.
The tutorial provides students with the opportunity to serve as an apprentice to a professor in order to learn the process of academic research. The student would engage in all aspects of the professor's research project, potentially including data collection, report writing, joint paper presentations or publications, providing ideal preparation for graduate school.

4933,6 Internship in Geography
3 or 6 hours credit. Prerequisites: Consent of internship coordinator and faculty supervisor.
Supervised experience relevant to geography within selected community organizations. A maximum of 6 semester credit hours may be earned through the internship.

4953 Special Studies in Geography
(3-0) 3 hours credit.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4983 Research Practicum
3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor and the Department Chair.
The practicum provides students with the opportunity to focus on a specific research issue having practical applications in geography, governance, politics, or policy. Students participate in a hands-on research experience on the issue in a collective research environment. Potential practicum activities could be related to the Social Research Lab, the Media & Elections Studio, and the GIS Lab, for example.

4993 Honors Thesis
3 hours credit. Prerequisites: Enrollment limited to candidates for Honors in Geography during the last two semesters; completion of honors examination and consent of the Honors College.
Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval.

Geology (GEO)

Department of Geological Sciences, College of Sciences

NOTE: All prerequisites required for Geology (GEO) courses or courses counted toward major or minor requirements in geology must be completed with a grade of "C–" or better.

1013 The Third Planet [TCCN: GEOL 1301.]
(3-0) 3 hours credit.
Evolution of ideas concerning the earth's origin, structure, and age; social impact of recognizing the antiquity of the planet and humankind's brief presence; examination of how the distribution of planetary resources influenced the rise and clash of civilizations. May not be applied to a major in geology. May apply toward the Level I Core Curriculum requirement in science.

1103 Introduction to Earth Systems [TCCN: GEOL 1303.]
(3-0) 3 hours credit. Prerequisite: Successful completion of the following Core Curriculum requirement: MAT 1023 or above.
The earth as a dynamic planet; relation of the earth's present processes to its resources, structure, and internal composition. Nature of minerals and rocks, the hydrosphere, tectonics, earthquakes, volcanism, and surface features of the earth. Concurrent enrollment in GEO 1111 recommended. May apply toward the Level II Core Curriculum requirement in science.

1111 Introduction to Earth Systems Laboratory [TCCN: GEOL 1103.]
(1-3) 1 hour credit. Prerequisite: Completion of or concurrent enrollment in GEO 1103.
Relation of the earth's present processes to its resources, structure, and internal composition. Field and laboratory study of minerals, rocks, maps, and aerial and satellite photos. Field trips required.

1123 Earth History [TCCN: GEOL 1304.]
(3-0) 3 hours credit. Prerequisites: GEO 1103 and successful completion of the following Core Curriculum requirement: MAT 1023 or above. Concurrent enrollment in GEO 1131 recommended.
Formation and evolution of the earth, its life forms, and the major features of its surface. May apply toward the Level II Core Curriculum requirement in science.

1131 Earth History Laboratory [TCCN: GEOL 1104.]
(1-3) 1 hour credit. Prerequisites: GEO 1103 and GEO 1111; completion of or concurrent enrollment in GEO 1123.
Field and laboratory study of fossils and rock sequences; interpretation of earth history. Field trips required.

2003 Mineralogy
(3-0) 3 hours credit. Prerequisites: CHE 1103, GEO 1103, GEO 1111, MAT 1093, or consent of instructor. Concurrent enrollment in GEO 2011.
Crystallography, crystal chemistry, and the physical and optical properties of minerals. Principles of optical mineralogy and the microscopic determination of nonopaque minerals. Field trips required.

2011 Mineralogy Laboratory
(1-4) 1 hour credit. Prerequisite: Concurrent enrollment in GEO 2003.
Laboratory study of crystal models, crystals, and minerals. Use of the petrographic microscope for mineral identification. Field trips required. (Formerly GEO 2012. Credit cannot be earned for both GEO 2011 and GEO 2012.)

2113 Fundamentals of Geographic Information Systems (GIS)
(2-2) 3 hours credit. Prerequisite: CS 1073 or equivalent.
This course will serve as a basic introduction to the concepts and techniques of utilizing a Geographic Information System (GIS) to study and model environmental issues. In lecture and laboratory, students will study methods of querying, analyzing, creating and displaying GIS data utilizing industry standard software. Students will also be introduced to using the Global Positioning System (GPS) as a means for creating GIS data. (Formerly ES 2113 and ES 4043. Credit cannot be earned for more than one of the following: GEO 2113, ES 2113, or ES 4043.)

2123 Advanced Geographic Information Systems (GIS)
(2-2) 3 hours credit. Prerequisite: GEO 2113 or equivalent.
This course teaches advanced applications and concepts of Geographic Information Systems (GIS). Topics include, but are not limited to, spatial databases, spatial analysis, 3-D analysis and geostatistical analysis. Students will utilize standard GIS software to examine and analyze spatial data. (Formerly ES 2123 and ES 4053. Credit cannot be earned for more than one of the following: GEO 2123, ES 2123, or ES 4053.)

3004 Rocks, Fossils, and Global Tectonics
(2-4) 4 hours credit. Prerequisites: GEO 1103 and GEO 1111.
An investigation of the major rock forming minerals, petrogenesis of the major rock types, and their plate tectonic context. Study of major trends in fauna and flora through time and their application to interpreting plate tectonics, paleoenvironments, and paleoclimate. Credit may not be applied to a B.S. or B.A. major in Geology.

3013 Global Positioning System (GPS) Mapping for GIS
(2-2) 3 hours credit. Prerequisite: GEO 2113 or equivalent.
Students will learn to use the Global Positioning System (GPS) as a mapping tool for the collection of Geographic Information Systems (GIS) data. Topics include land navigation, rover operations, data dictionaries, differential correction methods, techniques for improving data accuracy and base station operation. Students in this course will spend significant time outdoors traveling over rough terrain. (Formerly ES 3013 and ES 4063. Credit cannot be earned for more than one of the following: GEO 3013, ES 3013, or ES 4063.)

3043 Petrology
(3-0) 3 hours credit. Prerequisites: GEO 2003, GEO 2011, and concurrent enrollment in GEO 3051.
Description, classification, occurrence, and origin of igneous and metamorphic rocks. Field trips required.

3051 Petrology Laboratory
(1-4) 1 hour credit. Prerequisites: GEO 2003, GEO 2011, and concurrent enrollment in GEO 3043.
Laboratory study of igneous and metamorphic rocks in hand specimen and thin section. Field trips required. (Formerly GEO 3052. Credit cannot be earned for both GEO 3051 and GEO 3052.)

3063 Paleontology
(3-0) 3 hours credit. Prerequisites: GEO 1103, GEO 1111, GEO 1123, GEO 1131, GEO 3123, GEO 3131, or consent of instructor, and concurrent enrollment in GEO 3071.
Study of fossil animals and plants. Emphasis on invertebrate animals. Systematics, biostratigraphy, paleoecology, and evolution of fossil organisms. Field trips required.

3071 Paleontology Laboratory
(1-3) 1 hour credit. Prerequisites: GEO 1103, GEO 1111, GEO 1123, GEO 1131, GEO 3123, GEO 3131, and concurrent enrollment in GEO 3063.
Study of fossil specimens, collections, and preparation techniques. Field trips required.

3103 Structural Geology
(3-0) 3 hours credit. Prerequisites: GEO 3043, GEO 3051, and concurrent enrollment in GEO 3111.
Response of earth materials to natural stresses. Description and origin of geologic structures. Field trips required.

3111 Structural Geology Laboratory
(1-3) 1 hour credit. Prerequisite: Concurrent enrollment in GEO 3103.
Laboratory study of geologic structures using maps, cross-sections, photographs, and descriptive geometric and stereographic methods. Field trips required.

3112 Geologic Field Investigations
(1-4) 2 hours credit. Prerequisites: GEO 1111 and GEO 1131, or consent of instructor.
Introduction to field methods and the study of geologic features and processes in the field. Concurrent enrollment in GEO 4933 or GEO 4943 is not permitted. Some half-day and Saturday field trips required. (Formerly GEO 3113. Credit cannot be earned for both GEO 3112 and GEO 3113.)

3123 Sedimentation and Stratigraphy
(3-0) 3 hours credit. Prerequisites: GEO 1123, GEO 1131, GEO 2003, GEO 2011, and concurrent enrollment in GEO 3131.
Processes of erosion, transportation, and deposition that form bodies of sedimentary rock. Depositional systems and modeling are a significant area of study. Stratigraphic principles and temporal and spatial facies relationships at various scales. Field trips required. (Formerly titled "Sedimentary Geology.")

3131 Sedimentation and Stratigraphy Laboratory
(1-3) 1 hour credit. Prerequisites: GEO 2003, GEO 2011, and concurrent enrollment in GEO 3123.
Laboratory studies of sedimentary processes and their products. Hand specimens, thin sections, sedimentary structures, and interpretation of depositional environments. Stratigraphic case studies, including surface, subsurface, and sequence stratigraphic analysis. Field trips required. (Formerly titled "Sedimentary Geology Laboratory.")

3143 Economic Geology
(3-0) 3 hours credit. Prerequisites: GEO 2003, GEO 2011, and concurrent enrollment in GEO 3151.
Origin and occurrence of economic natural resources including metallic ore deposits, industrial minerals, and fossil fuels. Field trips required.

3151 Economic Geology Laboratory
(1-3) 1 hour credit. Prerequisites: GEO 2003, GEO 2011, and concurrent enrollment in GEO 3143.
Laboratory study of ore specimens and industrial minerals from important ore localities. Field trips required.

3163 Oceanography
(3-0) 3 hours credit.
General oceanography, with emphasis on marine geology and especially the continental margins. An optional field trip may be offered.

3374 Geochemistry
(2-4) 4 hours credit. Prerequisites: GEO 1103, GEO 1111, CHE 1103, and CHE 1121, or consent of instructor.
A survey of geochemical processes and the distribution of elements in the earth. Application of geochemical methods and data to the solution of geologic problems. Includes geochemical laboratory experiments and use of analytical equipment. Incorporates use of standard computer software for analysis of geochemical data and graphing of results.

3383 General Geophysics
(3-0) 3 hours credit. Prerequisites: MAT 1224 and PHY 1623 or PHY 1943.
This course examines the interrelated geology and physics of the Earth's interior as deduced from earthquake seismology, gravity and magnetic fields, and the application of geophysical methods to the exploration of near-surface cultural and natural resources. Topics in archeological, environmental, and engineering geophysics will be explored through the methods of refraction seismology, electrical resistivity, electromagnetic induction, microgravity, and ground penetrating radar. Field trips required.

3393 Introduction to Isotope Geochemistry
(3-0) 3 hours credit. Prerequisite: GEO 3374.
The course includes a review of theories of nuclear structure, stability of nucleus, nucleosynthesis and origin of elements, and introduces both radiogenic and stable isotope geochemistry. Topics include radioactive decay schemes for tritium-helium, U-Pb, Rb-Sr, Sm-Nd, K-Ar, and U-Th-Pb-He systems; isotopic fractionations of stable isotopes of C, H, O, N, and S; and application of radiogenic and stable isotopes to petrology, evolution of the crust and mantle, geochronology, geothermometry, archaeology, ecology, hydrology, and paleoclimatic interpretation.

4013 Volcanology
(3-0) 3 hours credit. Prerequisite: GEO 3043 or consent of instructor.
A survey of volcanoes and volcanic processes, including historically important volcanic eruptions and the prediction and mitigation of volcanic hazards. Field trips required.

4023 Engineering Geology
(3-0) 3 hours credit. Prerequisites: PHY 1923 (engineering majors only) or PHY 1603 or PHY 1943, and MAT 1214; or consent of instructor.
Geologic factors in construction. Geotechnical properties of minerals, rocks, and soils. Case studies. Field trips required. (Formerly GEO 3023. Credit cannot be earned for both GEO 4023 and GEO 3023.)

4063 Environmental Geology
(3-0) 3 hours credit. Prerequisites: GEO 1103 and GEO 1111.
An analysis of human interaction with geologic systems; the risks and effects of natural geologic hazards such as volcanic eruptions, earthquakes, and floods. Topics will include the effects of human activity on natural systems such as groundwater quality and recharge, river systems, and coasts. The meaning of "geologic repository" for human waste disposal and how the concept is applied will also be addressed.

4093 Principles of Remote Sensing
(2-2) 3 hours credit.
This course will provide a thorough introduction to remote sensing theory, technology, and application. The emphasis in this course is on understanding the underlying principles of acquiring, interpreting, and applying data from imaging systems covering the electromagnetic spectrum from the ultraviolet through the microwave. (Formerly ES 4093. Credit cannot be earned for both GEO 4093 and ES 4093.)

4113 Geomorphology
(3-0) 3 hours credit. Prerequisites: GEO 1103 or GRG 2613, or consent of instructor, and junior or senior standing, and concurrent enrollment in GEO 4121.
Examination of landforms on the Earth's surface and landscape-forming processes. Field trips may be required.

4121 Geomorphology Laboratory
(1-3) 1 hour credit. Prerequisites: GEO 1103 or GRG 2613, or consent of instructor, and junior or senior standing, and concurrent enrollment in GEO 4113.
Interpretation of landforms and their formative processes from maps, aerial photographs, and calculations. Field trips required.

4193 Field-Based Inquiry
(2-2) 3 hours credit. Prerequisites: Completion of mathematics and Level II science Core Curriculum requirements.
This course should enable future teachers to integrate fieldwork and inquiry into their curriculum. Observational and descriptive skills from a field-based research perspective will be emphasized. Mapping techniques will include pace-and-compass mapping, plane table mapping, and an introduction to Global Positioning System (GPS) and Geographic Information Systems (GIS) mapping. An interdisciplinary approach that explores Earth system interactions will be highlighted. Students will develop and carry out a research project based upon fieldwork. Students in this course will spend significant time outdoors traveling over rough terrain. May not be applied to a B.S. or B.A. major in geology. (Same as ES 4193. Credit cannot be earned for both GEO 4193 and ES 4193.)

4623 Ground-Water Hydrology
(3-0) 3 hours credit. Prerequisites: GEO 1103, GEO 1111, PHY 1603 or PHY 1943, and MAT 1214.
Hydrologic cycle and the theory of underground water. Recharge and discharge of aquifers; water quality; exploration and development of ground-water supplies. Field trips required.

4803 Analytical Methods in Geology
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
The principles and applications of x-ray diffraction to crystalline materials. (Formerly titled "X-ray Crystallography.")

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree in geology.

4933 Field Geology Part I
(1-6) 3 hours credit. Prerequisites: GEO 3103 and GEO 3111, or consent of instructor.
Part I: Field mapping and measurements. Field trips are required. (Formerly GEO 4946. Credit cannot be earned for both GEO 4933 and GEO 4946.)

4943 Field Geology Part II
(1-6) 3 hours credit. Prerequisite: GEO 4933 or consent of instructor.
Part II: Field mapping and measurements. Field trips are required. (Formerly GEO 4946. Credit cannot be earned for both GEO 4943 and GEO 4946.)

4951-3 Special Studies in Geology
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Research
3 hours credit. Prerequisites: Enrollment limited to candidates for College Honors during their last two semesters; approval by the College Honors Committee.
Supervised research and preparation of an honors thesis. May be repeated only once with approval.

German (GER)

Department of Modern Languages and Literatures, College of Liberal and Fine Arts

1014 Elementary German I [TCCN: GERM 1411.]
(3-2) 4 hours credit.
Fundamentals of German offering the opportunity to develop listening, reading, speaking, and writing skills. Introduction to German culture.

1024 Elementary German II [TCCN: GERM 1412.]
(3-2) 4 hours credit. Prerequisite: GER 1014, the equivalent, an appropriate placement test score, or consent of instructor.
Fundamentals of German offering the opportunity to further develop abilities in listening, reading, speaking, and writing skills. Further exposure to German culture.

2013 Intermediate German I [TCCN: GERM 2311.]
(3-1) 3 hours credit. Prerequisite: GER 1024, the equivalent, an appropriate placement test score, or consent of instructor.
Continued opportunity to develop listening, reading, speaking, and writing skills. Continued exposure to German culture.

2023 Intermediate German II [TCCN: GERM 2312.]
(3-1) 3 hours credit. Prerequisite: GER 2013, the equivalent, an appropriate placement test score, or consent of instructor.
Continued opportunity to develop listening, reading, speaking, and writing skills. Continued exposure to German culture.

2333 German Literature in English Translation
(3-0) 3 hours credit.
Major works of German literature across time, genres, and movements. (Formerly GER 3333. Credit cannot be earned for both GER 2333 and GER 3333.)

3023 Advanced Language Skills
(3-0) 3 hours credit. Prerequisite: GER 2023 or consent of instructor.
Development of oral and written language skills using contemporary readings, media, and oral discourse. Emphasis on increasing fluency through vocabulary expansion activities and selective grammar review. May be repeated for credit when topics vary.

3413 Survey of German Literature and Culture
(3-0) 3 hours credit. Prerequisite: GER 2023 or consent of instructor.
Selected works from the medieval period to the 21st century are studied as examples of central movements in German culture and literary history. The course presents the shape of German civilization, emphasizing the major periods, styles, movements, and generations. May be repeated for credit when topics vary.

4003 Topics in German Literature
(3-0) 3 hours credit. Prerequisite: GER 2023 or consent of instructor.
Focus on a specific area of German literature, from the medieval period through the 21st century. Selected texts are studied as examples of representative movements, genres, or authors in German literary history. May be repeated for credit when topics vary.

4213 Topics in German Culture and Linguistics
(3-0) 3 hours credit. Prerequisite: GER 2023 or consent of instructor.
Focuses on selected topics of cultural history, such as Vienna 1890–1914, Expressionism, contemporary cultural/political developments, or on a linguistic topic. May be repeated for credit when topics vary.

4913 Independent Study
3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933 Internship in German
3 hours credit. Prerequisite: Permission of Department Chair.
Supervised experience in a setting that provides the opportunity to integrate theory and practice in language usage. May be repeated once for credit.

4953 Special Studies in German
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Research
3 hours credit. Prerequisite: Consent of the undergraduate advisor.
Supervised research and preparation of an honors thesis. May be repeated once for credit, with approval.

Global Analysis (GLA)

Department of Political Science and Geography, College of Liberal and Fine Arts

3013 Introduction to Global Analysis
(3-0) 3 hours credit.
An overview of global conditions and events traditionally subject to analysis by American and international organizations, such as defense and security concerns, economic development, natural resources, human migration, terrorism, arms transfers and weapons proliferation, natural disasters, and international cooperation. Provides an overview of how government and private sector organizations respond and how they engage in defense, diplomacy, intelligence, etc. Discusses the role and operations of analytical functions in government and private organizations. May be taught from different perspectives depending upon faculty expertise and interests. (Same as POL 3273. Credit cannot be earned for both GLA 3013 and POL 3273.)

4013 The Intelligence Community and World Affairs
(3-0) 3 hours credit.
Discusses the historical and political developments of intelligence as a component of defense and security policy, mainly in the post-World War II era. Examines the legal foundations of the American national security and intelligence functions, including discussion of accountability and control measures. Emphasizes the role of intelligence in national security policy-making principally conducted by the Executive and Legislative branches in democratic societies. Discusses the main functions of intelligence. (Same as POL 4013. Credit cannot be earned for both GLA 4013 and POL 4013.)

4123 Techniques in Global Analysis
(3-0) 3 hours credit.
Examines various techniques for collecting, analyzing, and communicating information by government and private sector organizations engaged in global analysis. Stresses methodologies for analyzing informational inputs, including strengths and weaknesses of various analytical applications. Studies analytic cultures and pathologies associated with information collection and interpretation, legal and political oversight, accommodation of dissenting views in interpretation and policy debate, and economic, political, and cultural implications of analytical findings. Compares and contrasts analytical methods employed by public and private organizations. May be taught from different perspectives depending upon faculty expertise and interests. (Same as POL 4023. Credit cannot be earned for both GLA 4123 and POL 4023.)

4203 Current Topics in Global Analysis
(3-0) 3 hours credit.
An organized course offering the opportunity for specialized study of topics in such areas as domestic security planning, politics of national defense budgets and products, terrorism, arms transfers and controls, natural disaster preparedness, peace making, nuclear weapons proliferation and negotiations, international trade agreements and policies, national security economics, and civil liberties controversies. (Same as POL 4203. Credit cannot be earned for both GLA 4203 and POL 4203.)

4913 Independent Study in Global Analysis
3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College of Liberal and Fine Arts.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree. A maximum of 3 semester credit hours may be applied to the minor.

4933 Internship in Global Analysis
3 hours credit. Prerequisite: Consent of the internship coordinator.
Supervised experience relevant to Global Analysis within selected organizations at the local, state, national, or international levels. A maximum of 3 semester credit hours may be applied to the minor.

Greek (GRK)

Department of Philosophy and Classics, College of Liberal and Fine Arts

1114 Introductory Classical Greek I
(3-2) 4 hours credit.
Fundamentals of Greek grammar and readings in Greek.

1124 Introductory Classical Greek II
(3-2) 4 hours credit.
Fundamentals of Greek grammar and readings in Greek.

2113 Intermediate Classical Greek I
(3-0) 3 hours credit. Prerequisite: GRK 1124 or the equivalent.
Continued practice in reading Greek prose and poetry. Selections from Plato and Homer. Review of Greek grammar and syntax.

3113 Selected Greek Authors: Prose
(3-0) 3 hours credit. Prerequisite: GRK 2113 or the equivalent.
Reading and in-depth analysis of a particular Greek prose author such as Lysias, Herodotus, Demosthenes, Plato or Isocrates.

3123 Selected Greek Authors: Poetry
(3-0) 3 hours credit. Prerequisite: GRK 2113 or the equivalent.
Reading and in-depth analysis of a particular Greek poet such as Hesiod or Homer, a specific genre such as elegiac or lyric poetry, or a play of the tragedians Aeschylus, Sophocles, and Euripides.

Health (HTH)

Department of Health and Kinesiology, College of Education and Human Development

NOTE: All prerequisites for Health (HTH) courses must be completed with a grade of "C–" or better.

2133 School Health [TCCN: TECA 1318.]
(3-0) 3 hours credit.
This course is designed to provide teacher certification students with the opportunity to gain developmentally appropriate knowledge and skills in health and environmental safety. It will address health-related issues in personal, interpersonal, and community settings and creating a safe teaching environment.

2413 Introduction to Community and Public Health
(3-0) 3 hours credit.
This course is a survey of the profession of public health and the competencies required of health educators, including examination of philosophies, ethics and current trends. This course serves as a foundation for other courses in the health degree.

2513 Personal Health [TCCN: KINE 1304.]
(3-0) 3 hours credit.
Emphasizes the concept of mind, body, and spirit as necessary components of total well-being; principles of preventive health; and self-responsibility for personal health behaviors.

3003 Survey of Drugs and Health
(3-0) 3 hours credit.
Study of the use and abuse of drugs and other substances. Examines addiction, dependence, tolerance, motivation for use, and effects of substance abuse on health and society. Non-Health majors and minors only.

3013 Survey of Human Nutrition
(3-0) 3 hours credit.
An overview approach to understanding the principles of nutrition and their effect on health and fitness. Emphasis on major nutritional issues throughout the human life cycle; self-evaluation of diet and fitness habits. Non-Health majors and minors only.

3023 Survey of Human Sexuality
(3-0) 3 hours credit.
A study examining the breadth of human sexuality, including psychosocial, cultural and physical aspects, and its impact on our lives. Non-Health majors and minors only.

3043 Principles of Weight Management
(3-1) 3 hours credit.
An in-depth study of the field of prevention and management of obesity. This course provides practical application of nutritional, psychological, and physical activity principles that help individuals manage their own weight and is suitable for students in health, kinesiology, psychology, biology, counseling, or others. A noncompetitive, monitored activity component is required.

3303 Physical Activity and Health
(3-0) 3 hours credit. Prerequisite: HTH 3503.
The course provides a survey of the health-related effects and social-cultural and behavioral determinants of physical activity and exercise. Biological/physiological mechanisms for adaptations to physical activity are also addressed.

3503 Theories of Health Behavior
(3-0) 3 hours credit.
Designed to provide an overview of health behavior theories, program planning models and multi-level interventions typically used in public health. Each level of the socio-ecological model will be discussed including individual, interpersonal, organization, community and policy. Directed field experience is required. (Formerly titled "Foundations of Health Theory.")

3513 Community Health
(3-0) 3 hours credit. Prerequisites: HTH 2413 and HTH 3503.
Study of community health problems and the function and organization of public, private, and voluntary health agencies, application of health theories and models and program planning methods. Directed field experience is required. Offered Fall Semester only.

3523 Worksite Health Promotion
(3-0) 3 hours credit. Prerequisites: HTH 2413 and HTH 3503.
Organization, administration, and supervision of health programs in the community, school, business, or industry setting. Application of health theories, models and program planning methods is required. Directed field experience is required. Offered Spring Semester only.

3533 Drugs and Health
(3-0) 3 hours credit. Prerequisites: Completion of Core science requirements, anatomy and physiology, HTH 2413, and HTH 3503.
Study of the use and abuse of drugs and other substances. Examines addiction, dependence, tolerance, motivation for use, and effects of substance abuse on health and society. Application of theories and models for program development, implementation and evaluation. Health majors and minors only. Offered Spring Semester only.

3543 Growth and Development
(3-0) 3 hours credit.
Physical, social, and psychological development throughout the life cycle. Emphasis on changes in early adolescence and their implications for health professionals. Offered Spring Semester only.

3553 Emotional Wellness
(3-0) 3 hours credit.
Practical application of techniques for shaping healthier emotional behavior; emphasis on personality, stress management, and fulfilling relationships. Offered Fall Semester only.

3563 Child and Adolescent Health Promotion
(3-0) 3 hours credit.
Designed for students who are interested in promoting the health of youth, as well as those students pursuing academic training in elementary and secondary education, and school and community practitioners. The primary goal of this course is to improve the health literacy of teachers and health promotion specialists through understanding and application of evidence-based child and adolescent health promotion concepts. Offered Fall Semester only.

4503 Human Disease and Epidemiology
(3-0) 3 hours credit.
An in-depth look at the etiology, prevention, and treatment of chronic and contagious diseases afflicting humans and epidemiological methods.

4513 Consumer Health
(3-0) 3 hours credit.
Study of the consumer's selection of health products and services; health frauds, scams and quackery; and the acquisition of basic knowledge for making responsible decisions when selecting professional, complementary, or alternative health care services and products. Offered Fall Semester only.

4523 Understanding Human Sexuality
(3-0) 3 hours credit. Prerequisites: HTH 2413 and HTH 3503.
An in-depth study of human sexuality, including psychosocial, cultural and physical aspects. Application of theories and models for program development, implementation and evaluation. Health majors and minors only. Directed field experience is required. Offered Spring Semester only.

4533 Nutrition and Health
(3-0) 3 hours credit. Prerequisites: Completion of Core science and mathematics requirements, BIO 2083, BIO 2103, HTH 2413, and HTH 3503.
An in-depth examination of the principles of nutrition and their effects on health and fitness. Emphasis on critical thinking and translation of nutritional knowledge to real-world settings. Includes self-evaluation of diet and fitness habits. Application of health theories and models for program development, implementation, and evaluation in nutritional context. Health majors and minors only.

4543 Environmental Health and Safety
(3-0) 3 hours credit.
Intensive coverage of the aspects of a human being's health and safety in a changing environment. Considers applicable factors of ecology, including problems related to water, waste, pesticides, foods, radiation, population, and other aspects of the total ecosystem, as well as personal and occupational safety within these parameters. Offered Fall Semester only.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4936 Internship in Health
6 hours credit. Prerequisites: Student is required to have a cumulative grade point average of 2.0 or greater and must be within 12 semester credit hours of graduation.
The opportunity for work experience in a private or public health-related agency. Opportunities are developed in consultation with the faculty advisor and on-site coordinator. No more than 6 semester credit hours of internship will apply to a bachelor's degree. (Credit cannot be earned for both HTH 4936 and KIN 4936.)

4951-3 Special Studies in Health
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisite: Consent of instructor.
Organized course offering the opportunity for specialized study in an area of health not available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Thesis
3 hours credit. Prerequisites: Enrollment limited to candidates for honors in the Department of Health and Kinesiology during the last two semesters; consent of the Honors College.
Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval.

History (HIS)

Department of History, College of Liberal and Fine Arts

1043 United States History: Pre-Columbus to Civil War Era [TCCN: HIST 1301.]
(3-0) 3 hours credit.
From a variety of perspectives, this course will analyze topics covering the geography of North America; pre-Columbian societies; European colonial societies and their transition into the national period; the development of modern economic structures and political traditions; westward expansion; class, race, ethnicity, and gender; cultural diversity and national unity; the relations of the United States to other nations and cultures; and the impact of these trends and issues on the development of the nation.

1053 United States History: Civil War Era to Present [TCCN: HIST 1302.]
(3-0) 3 hours credit.
From a variety of perspectives, this course will analyze topics covering the development of the United States as an urban industrial nation; the rising importance of the business cycle, corporations, and immigration; political traditions; class, race, ethnicity, and gender; cultural diversity and national unity; the relationship between the United States and other nations and cultures; and the impact of these trends on the development of the nation.

2003 Historical Methods
(3-0) 3 hours credit. Prerequisite: WRC 1013.
An introduction to the study of history in which students will consider examples and approaches to the problems of research and writing in the field. This course is designed for students completing requirements for a major or minor in history.

2053 Texas History [TCCN: HIST 2301.]
(3-0) 3 hours credit.
An overview of the development of Texas from the era of Spanish exploration and colonization to the modern period, with emphasis on major events in the 19th and 20th centuries. Topics may vary, but generally will include cultural geography, contributions of ethnic minorities and women, the Republic of Texas, statehood, secession, Reconstruction, conservatism, reform, oil exploration, urbanization, and political, economic, and social change in the post-World War II era.

2123 Introduction to World Civilization to the Fifteenth Century [TCCN: HIST 2321.]
(3-0) 3 hours credit.
A general introduction to World History from the Late Neolithic to the Columbian Encounter in the late 15th century CE. Broad overview of the pattern of development of major civilizations and their interactions with closer attention given to those events, institutions, beliefs, and practices that involved and affected large numbers of people and had lasting significance for later generations. (Same as IDS 2203. Credit cannot be earned for both HIS 2123 and IDS 2203.)

2133 Introduction to World Civilization since the Fifteenth Century [TCCN: HIST 2322.]
(3-0) 3 hours credit.
A general introduction to World History since the late 15th century CE. Broad overview of the pattern of development of major civilizations and their interactions with closer attention to those events, institutions, beliefs, and practices that involved and affected large numbers of people and laid foundations of the modern world. (Same as IDS 2213. Credit cannot be earned for both HIS 2133 and IDS 2213.)

2533 Introduction to Latin American Civilization
(3-0) 3 hours credit.
An introduction to Latin America examining the broader topics that shaped its history. These topics may include Native American societies; the encounter between Native Americans, Europeans, and Africans; the post-Independence era; the different paths toward nation-building; the nature of authoritarian regimes; the impact of revolutions; and the cultural development of Latin America and its historiography.

2543 Introduction to Islamic Civilization
(3-0) 3 hours credit.
An introduction to the role of Islam in world history from the Prophet and the founding of the Umayyad Caliphate to the breakup of the Ottoman Empire. Primary focus will be on the Ottoman Empire, its institutions and culture, and its interaction with Western civilization.

2553 Introduction to East Asian Civilization [TCCN: HIST 2323.]
(3-0) 3 hours credit.
An introduction to East Asian history and culture from antiquity to the beginning of the modern period during the 17th and 18th centuries. The course will cover China, Japan, Korea, and Vietnam, with particular attention to the development of culture, society, and the state in the traditional era prior to the arrival of the West in East Asia.

2563 Introduction to European Civilization
(3-0) 3 hours credit.
An introduction to the major historical and historiographical problems in the experience of Europe from the earliest times to the present. The course will expose students to a variety of intellectual approaches and to the diversity of European history.

2573 Introduction to African Civilization
(3-0) 3 hours credit.
An introduction to the major historical and historiographical problems in the experience of Africa from the earliest times to the present. The course will expose students to a variety of intellectual approaches and to the diversity of African history.

2583 Introduction to South Asian Civilization
(3-0) 3 hours credit.
This course explores the history, cultures, religions, and civilization of the Indian subcontinent from earliest times to the present. It begins with prehistory and the Indus civilization, the migration and settlement of the Aryans, the ancient empires of the Maurya and Gupta, and the Islamic conquest. The rise and fall of various Muslim kingdoms of the Mughal Empire, British colonial rule, the nationalist movements and independence of India, Pakistan, and Bangladesh are also discussed.

3003 Colonial America and the Formation of American Society
(3-0) 3 hours credit.
An examination of the development and transformation of colonial societies in the 17th and 18th centuries, with special emphasis on family and community studies as measures of social change.

3023 American Independence and National Unity, 1760–1820
(3-0) 3 hours credit.
Topics may include origins of the American Revolution, the Revolutionary War, the struggle for unity, and the early years of nationhood.

3043 History of Women in the United States: Pre-Columbus to 1890
(3-0) 3 hours credit.
An examination of how women have been affected by economic, social, cultural, and political structures, with emphasis on the role of class, race, ethnicity, region, and age. Topics may include Native American societies, colonial life, the impact of the American Revolution, the early national period, slavery, the Civil War, westward expansion, and the "cult of domesticity." (Formerly HIS 3473. Credit cannot be earned for both HIS 3043 and HIS 3473.)

3053 History of Women in the United States: Since 1890
(3-0) 3 hours credit.
This course will offer an analysis of women's lives in U.S. history since 1890 and may examine women's role in the Progressive Era, World Wars, the Civil Rights Movement, and the Feminist Movement. It will consider the effects of economic, social, cultural, and political structures on women since 1890, with particular attention to the role of class, race, ethnicity, region, and age. (Formerly HIS 3473. Credit cannot be earned for both HIS 3053 and HIS 3473.)

3063 The Spanish Borderlands, 1521–1821
(3-0) 3 hours credit.
An overview and analysis of Spanish exploration and colonization in the northern frontier of colonial Mexico, including the introduction of Hispanic institutions, customs, and traditions in the development of a frontier society in the region adjacent to the international boundary.

3073 The Mexican Borderlands/The American Southwest
(3-0) 3 hours credit.
American westward movement into the Southwest, the settlement and development of the area, and its political history are considered in relation to national trends. Attention is given to the area as a meeting place of various European, American, and Asian ethnic groups and to their cultural institutions and expressions as reflections of the development of the area within U.S. history.

3083 History of the American West
(3-0) 3 hours credit.
An examination of the American westward movement in the 19th and 20th centuries. Topics may include the conquest and settlement of the territory, the relationship of the new territory to the nation, patterns of economic development, community building, population diversity, and the symbolism of the frontier.

3093 United States Constitutional History
(3-0) 3 hours credit.
Constitutional developments from the formation of the state and federal constitutions to Watergate. Particular attention is paid to the context of judicial decision-making at the Supreme Court level and the impact of those decisions on American life. Complements POL 3323 Constitutional Law.

3113 North American Indian Histories
(3-0) 3 hours credit.
A history of the American Indian from European contact to the present. Attention is given to the internal cultural, economic, and political developments of the different Indian groups as well as to the European and American developments and policies affecting the Indian. (Formerly titled "The American Indian.")

3123 Colonial Texas under Spanish and Mexican Rule to 1836
(3-0) 3 hours credit.
An overview of Texas history beginning with 16th-century and 17th-century Spanish exploration, with emphasis on 18th-century colonization, and culminating in 19th-century Anglo-American immigration and the sociopolitical changes that resulted in Texas independence.

3133 Themes in the Social History of the United States
(3-0) 3 hours credit.
A survey of social history focusing on the American experience. The course explores changes in the family, work, gender roles, mobility, migration, urbanization, and industrialization, with special attention to class, race, ethnicity, and gender.

3153 Development of American Urban Society
(3-0) 3 hours credit.
This course investigates the impact of urbanization on American society, economy, and culture. Topics may vary, but consideration will be given to urban social and spatial organization, migration, urban systems, technology, communication, and forms of individual and family adaptation.

3173 Modern America, 1914–1945
(3-0) 3 hours credit.
An examination of the many developments which fundamentally transformed American society between 1914 and 1945. The course examines how these developments reverberated throughout society, affecting all aspects of American life from habits of leisure to patterns of race relations, from the role of women to the style of presidential leadership.

3183 Law and American Development
(3-0) 3 hours credit.
The impact of law from colonial times to the present. Particular attention will be paid to the impact of law on social change, economic growth, and political development.

3193 The South in American History
(3-0) 3 hours credit.
Topics may include development of southern identity, slavery, Civil War and Reconstruction, Jim Crowism, the black experience, and the civil rights movement, with emphasis on the period since 1815.

3243 Europe in the Nineteenth Century
(3-0) 3 hours credit.
The course offers a survey of European history from the Congress of Vienna until World War I. Topics may include an examination of the changing scope of international relations, industrial growth and acceleration, the conditions among social groups, and various social and political initiatives among European nations.

3253 The United States since 1945
(3-0) 3 hours credit.
An examination of the social, political, economic, and cultural developments which have shaped life in the United States since World War II. Students will explore the causes and consequences of the country's evolution into a pluralistic, suburban, postindustrial superpower during the last half of the 20th century.

3263 Seventeenth- and Eighteenth-Century Europe
(3-0) 3 hours credit.
A survey of European history under the Ancient Regime to 1789. Examination of the development of and the limits to absolutism, the "crisis" of the 17th century and the Baroque, the rise of science, and the culture of the Enlightenment.

3273 The Early Middle Ages
(3-0) 3 hours credit.
This course will examine culture and society in the West (in what was to be Europe) from Late Antiquity to about A.D. 1000. It will focus on the transformation and survival of old social, political, and cultural forms at the end of the Roman Empire and the emergence of new ones in the successor states of Italy, Gaul, Germany, and Britain.

3283 Twentieth-Century Europe
(3-0) 3 hours credit.
Economic, social, political, and cultural change in Europe since World War I. Topics may include the formation of new political movements (such as social democracy, communism, fascism) between the wars, World War II and its effects, the postwar transformation of Europe, and the Cold War in Europe.

3293 Imperial Spain
(3-0) 3 hours credit.
Iberian history from the evolution of the northern kingdoms to the early 19th century. Topics may include the growth and development of Castile and Aragon, Hapsburg imperialism, the Bourbon reformers, and the collapse of the monarchy and the rise of the Carlist movement.

3303 History of Mexico
(3-0) 3 hours credit.
An overview of Mexican history from the pre-Columbian indigenous civilizations to the present. The course will cover the peopling of Mexico, the conquest, the formation of colonial society, independence, the Mexican American War, the liberal reforms, the Porfiriato, and the Mexican Revolution.

3313 History of U.S. Relations with Latin America
(3-0) 3 hours credit.
A survey of U.S. relations with Latin America from the Monroe Doctrine to the present. General topics may include the Monroe Doctrine, Manifest Destiny, gunboat diplomacy, the Good Neighbor Policy, the Cold War, and the Alliance for Progress. Specific themes include U.S. reactions to revolutions, authoritarian regimes, and reformist governments.

3323 Latinas and Latinos in the United States to 1890
(3-0) 3 hours credit.
This course surveys the origins of Latinas and Latinos in the United States from the point of contact between indigenous people and Spanish colonizers to 1890. Thematic topics may include conquest, Spanish colonization, the development of borderlands cultures, migratory and settlement patterns, and labor. While the course will end at a time when the U.S. is emerging as a global industrialized nation, much of it covers a time period prior to the foundation of the U.S. as a nation state, thus demonstrating the deep histories of Latinas and Latinos tied to this land.

3333 Latinas and Latinos in the United States from 1890 to Present
(3-0) 3 hours credit.
This course surveys the history of Latinas and Latinos in the modern United States from 1890 to the present. Covering the period of the greatest migratory flows into the United States from points all over Latin America, especially from Mexico, Cuba, and Puerto Rico, this course will address the development of transnational communities and regional identities within the U.S. Emphasis will be placed on the dialectic between immigration and historically rooted communities, the formation of varied racial and class based identities, and the dynamic geographies of Latinas and Latinos.

3353 Latin America since Independence
(3-0) 3 hours credit.
The course will emphasize the 19th and 20th centuries and may include the following topics: the breakdown of colonialism; the problems of independence; neocolonial development; the impact of the Depression; industrialization and urbanization; and the importance of nationalism, socialism, fascism, communism, and revolution in the contemporary era.

3373 Revolution in Latin America
(3-0) 3 hours credit.
An analysis of the role colonial legacies played in 19th- and 20th-century social and political violence. Case studies may include Mexico, Bolivia, Cuba, Chile, and Nicaragua.

3403 Pre-Hispanic and Colonial Latin America
(3-0) 3 hours credit.
An analysis of the pre-Columbian Indian civilizations, the Spanish conquest, and the Spanish and Portuguese colonial societies of the New World.

3423 United States–Mexico Border
(3-0) 3 hours credit.
This course will examine social, economic, and political conditions shaping the character of the United States-Mexico borderlands. Using a transnational approach, students will have an opportunity to explore the history of the border as a multi-cultural region, and to examine issues relevant to the development of the border area. Topics of interest may include urbanization; industrialization; constructions of race, ethnicity, class, gender, and nationality; trade; migration; security; and ecological problems.

3433 The Emergence of Modern America, 1877–1914
(3-0) 3 hours credit.
An examination of social and political responses to the industrial revolution in the United States.

3453 History of Medicine in America
(3-0) 3 hours credit.
The course examines the social and cultural history of health and healing in the United States. By contextualizing the history of health, healthcare, patient stories, disease, and professional development, it provides analytical skills necessary to better evaluate the place of medicine in modern American culture. The particular focus of the course may vary by semester to more closely examine such historical topics as: women and health; rise of the medical profession; technology and medicine; popular culture and health history; and medicine and film.

3463 History of Religion in the United States
(3-0) 3 hours credit.
This course examines Puritanism, disestablishment, the First and Second Great Awakenings, religion and the Civil War, the Social Gospel, urban revivalism and religion, the growth of evangelical Protestantism, and religion in modern America. Special thematic concentrations may include church-state relations, the role of race and ethnicity in American religion, Catholicism and African American religions.

3493 History of San Antonio
(3-0) 3 hours credit.
Topics may include the cultural origins of colonial San Antonio; political, economic, and social development; and the effects of urbanization on local ethnic communities.

3513 Warfare in the Premodern World
(3-0) 3 hours credit.
A comparative study of military change in the ancient, medieval, and early modern world (to 1815 and the end of the Napoleonic Wars). The course examines such controversies as the Military Revolution and the Fiscal-Military State and describes how societies in Europe, Asia, Africa, and the Americas organized, trained, and provisioned military forces, developed tactics and strategies of war, and how their military organization impacted state-society relations and their struggles for survival or imperial expansion.

3523 European Cultural History
(3-0) 3 hours credit.
Introduction to various aspects of the European cultural heritage focusing on the interaction between society and culture. Topics may include popular culture, the arts, philosophy, science, social theory, ideology, and mass media. Course content may include discussions of sexuality and graphic visual materials suitable for an adult audience.

3543 History of Modern Warfare
(3-0) 3 hours credit.
Survey of the major developments in the history of war since the Napoleonic era. Analyses of the social, economic, and political context in which wars have occurred. Topics may include emergence of new forms of weaponry, strategy, logistics, and tactics.

3553 Civil War America
(3-0) 3 hours credit.
This course explores the Civil War era in American history, beginning by tracing the causes of the Civil War, including the role that the economics of slavery played in the conflict. It studies the war itself, examining the social, cultural, and military aspects of the war. The course concludes with an examination of the attempts to reconstruct the Union in the years after the Confederate surrender.

3563 African American History to the Civil War
(3-0) 3 hours credit.
A survey of the social, economic, political, and cultural history of African Americans from the time of contact with European slave traders until the Civil War. The course will examine the process by which millions of Africans were taken from their homelands, enslaved, and transported to America, where they were gradually, and often violently, transformed into Americans. While the course will focus on the United States, it will also consider how the experiences of Blacks in America relate to the history of the peoples of the African diaspora.

3573 African American History since the Civil War
(3-0) 3 hours credit.
This course surveys the African American experience from emancipation to the present, focusing on political, economic, cultural, and social developments. The course will utilize both traditional historical methodology, with its emphasis on chronology and the examination of documents and alternative interdisciplinary methodologies, which analyze nontraditional sources such as film, music, and oral interviews.

3603 Occupation, Revolution and Nation in Africa
(3-0) 3 hours credit.
This course focuses on political and social change in Africa after 1800, a particularly tumultuous and often violent period in African history. Working from an African perspective, students will explore events and historical processes that were often triggered by external forces. The course examines the ways in which historical themes—conquest, resistance, revolution, nationalism, identity politics—play out in an African context. (Formerly titled "Africa in Colonial and Post-Colonial Contexts.")

3613 Migration, Society and Culture in Africa
(3-0) 3 hours credit.
Examination of political and social organization in African societies. The emphasis is on Africa prior to colonization. Topics will include regional trading networks, slavery, the range of political/governmental structures, cultural variation (including categories of gender and generation), and African relations with other parts of the world. (Formerly titled "African Politics, States, and Empires.")

3623 History of the Civil Rights Movement
(3-0) 3 hours credit.
An examination of the struggle for civil rights in the United States from the conclusion of the Civil War to the present. While particular attention will be paid to the movement by Black southerners for equal rights, the course will also consider the struggle for civil rights conducted by other racial minorities in the United States.

3633 Early Modern England, 1485–1760
(3-0) 3 hours credit.
English history in the Tudor, Stuart, and early Hanoverian eras emphasizing the growth of the national state, the overseas expansion of England, and preindustrial social and economic change.

3643 Modern Spain
(3-0) 3 hours credit.
A study of 19th- and 20th-century Spain beginning with the origins of the Carlist movement, continuing with the rise and fall of the two Spanish Republics, the Civil War, the advent of the Franco regime, and concluding with the restoration of the monarchy.

3723 The High Middle Ages and the Early Renaissance
(3-0) 3 hours credit.
This course will examine the cultural, political, and social achievements of High Medieval Europe, with particular reference to France, Germany, and Italy. It will then focus on the great crisis of the 14th century and the emergence of a new, antimedieval culture in Early Renaissance Italy to about 1450.

3733 Europe in the High Renaissance and Reformation
(3-0) 3 hours credit.
This course will study the cultural, social, and political developments of Italy and Northern Europe in the time of the High Renaissance and the Reformation (ca. 1450–1550).

3743 Imperial Russia
(3-0) 3 hours credit.
The development of Russia from the accession of Peter the Great to the outbreak of the Russian Revolution.

3753 The Soviet Union and After
(3-0) 3 hours credit.
The evolution of Russia from the revolution of 1917 to the present. A critical analysis of the construction and decline of a socialist society in the Soviet Union and the relationship of 20th-century Russia to the outside world.

3763 Russia before Peter the Great
(3-0) 3 hours credit.
An examination of the Russian state-building process in the period from the Mongol Yoke to the formation of the Russian Empire, focusing on the development of autocracy, serfdom, and the state service system and examining Russia's relations with Europe and Asia.

3773 The Age of the Baroque
(3-0) 3 hours credit.
This course will examine the formation of a Post-Renaissance culture in Europe, with the emergence of Mannerism and the Baroque, and the rise of science. It will also study the struggles for religious and political mastery on the continent from roughly the Peace of Augsburg (1555) to the end of the Thirty Years' War (1648), in the context of economic, social, and political change.

3803 World History in the Cinema
(3-0) 3 hours credit.
An analysis of several classic films to introduce for closer critical study important events and issues in world history which have intrigued film makers and their audiences as well as historians. Exploration of the similarities and differences between artistic and historical imagination. (Formerly HIS 2073. Credit cannot be earned for both HIS 3803 and HIS 2073.)

3813 American Political History
(3-0) 3 hours credit.
A study of American political history from the 18th century to the present. Deals with presidents and major national developments and may consider such topics as federalism, state politics, voting behavior, party systems, and political realignment.

3823 History of American Foreign Relations
(3-0) 3 hours credit.
This course examines the emergence of the United States as a world power and its subsequent activities in world affairs. The course places particular emphasis on the domestic roots of U.S. activity, the factors shaping perceptions of international affairs, and the causes and consequences of international conflicts involving the United States.

3843 Migration and History
(3-0) 3 hours credit.
What has caused people to migrate as individuals and as groups? To what extent has geographical mobility been a function of economic mobilization, political transformation, social upheaval, and/or technological revolution? How has the migratory process, in turn, affected the migrants themselves, both in their place of origin, and in the host society? Specific theme, regional focus, and time period may vary according to the instructor's choice of examples drawn from a variety of historical situations.

3903 Modern Japan
(3-0) 3 hours credit.
An overview of Japanese history since the end of the 16th century. Topics may include the Tokugawa period of early modern history, the Meiji transformation of state and society, the rise of Japanese militarism leading up to the Pacific War, the American occupation, and the subsequent rebirth of Japan into a global economic giant.

3913 Late Imperial China
(3-0) 3 hours credit.
Chinese history from the late Ming (ca. 1550) to the end of the Qing dynasty in the 1911 Revolution. The course will address the nature of imperial institutions, state-society interaction, economic developments, social and cultural changes, and China's relationship with the outside world.

3923 China in Revolution
(3-0) 3 hours credit.
A study of 20th-century China. The course will analyze and characterize the different phases of revolutionary changes in China and examine the sources of its revolutionary impulse.

3943 History of India
(3-0) 3 hours credit.
This course questions the extent to which South Asia is an outcome of its traditional structure (religion, caste hierarchy, joint families, village communities), and how much it is a product of global historical forces including colonialism, capitalism, feminism, and globalization. It examines politics and cultures of South Asia, with emphasis on the freedom struggle, the rise of the Congress and the Muslim League, the two-nation theory, partition and independence, the untouchables, and other contemporary issues including globalization and diaspora. (Formerly titled "Modern India, Pakistan, and Bangladesh.")

3953 Cultures and Empires of the Silk Road, 700 BCE – 1480 CE
(3-0) 3 hours credit.
An examination of the political, military, economic, and cultural interaction of nomadic and sedentary peoples along the northern Silk Road running from Western China through Central Asia to the Black Sea Steppe. Topics may range from the formation of the first powerful nomadic tribal confederations (Scythians, Sarmatians, Huns) in the Iron Age and culminating with the rise of the great Gunpowder Empires of the Ottomans, Timurids, and Moscow tsars in the 14th and 15th centuries.

3963 Women and Gender in India
(3-0) 3 hours credit.
This course examines the history of women in the Indian subcontinent from colonial times under British rule to modern independent India. Topics to be discussed and studied include the dowry system, colonial reform movements, education for women, special challenges for Muslim, Christian, and low-caste women, and the nationalist struggle for independence.

3973 Muslim South Asia: India, Pakistan, Bangladesh
(3-0) 3 hours credit.
This course examines the history of Islam and Muslims in the Indian subcontinent through a blend of political, economic, and cultural history. It begins with the Arab incursions of A.D. 711, scientific and cultural advances, theories of conversion, the spread of Sufi mysticism, and the establishment of Muslim kingdoms across north India. The creation and rule of the Delhi Sultanate, the Mughal Empire, Muslim-British relationships, and Muslim nationalism highlight processes of power and culture in diverse time periods. The establishment of Pakistan in 1947 and Bangladesh in 1971 raises issues about the role of Islam in modern Asian state-making.

4133 History and the Public
(3-0) 3 hours credit.
Investigation of the status, uses, and value of history in schools and universities, and in other spheres of life. Special interests include public and private roles of scholars and intellectuals, forms of public history, literary and cinematic uses of history, public policy applications, history as social and cultural criticism, and alternative conceptions of history and historians' work.

4143 History Standards and Their Public Reception
(3-0) 3 hours credit.
This course, intended especially for majors pursuing certification to teach History in the public schools, examines the continuing debate about the articulation of standards for United States and World History instruction in primary and secondary schools. It offers students the opportunity to review the range of specific skills and understandings professional historians have tried to represent in History education. It further identifies the external expectations and pressures upon History instruction in the current day as well as the past.

4223 Environmental History of the United States
(3-0) 3 hours credit. Prerequisite: HIS 2003 recommended.
An introductory survey of the interaction of human beings and the environment in the United States from early Indian occupancy to the present. Topics may include problems of ecological change, climate, energy, population, conservation, and human ideas and uses of nature.

4233 American Society in the 1960s
(3-0) 3 hours credit.
This course examines the political, cultural, and social developments that shaped American society in the 1960s. Topics will include the emergence of movements for social change, the expansion of the welfare state, the growth of the counterculture, and the Americanization of the war in Vietnam. The course will invite students to move beyond the stereotypes of the 1960s and to explore how different people responded to, participated in, and experienced the changes that occurred in American society during this turbulent decade.

4603 Issues in History
(3-0) 3 hours credit. Prerequisite: Upper-class standing or consent of instructor.
Coverage of topics of current interest in the field of history. May be repeated for credit when topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree. (Formerly HIS 4923.)

4911,3 Independent Study
1 or 3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933 Internship in History
3 hours credit. Prerequisites: HIS 2003 and consent of Department Chair.
Supervised experience relevant to history within selected community organizations. A maximum of 6 semester credit hours may be earned through Internship in History. Must be taken on a credit/no-credit basis.

4953 Special Studies in History
(3-0) 3 hours credit.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4973 Seminar in History
(3-0) 3 hours credit. Prerequisite: HIS 2003.
The opportunity for an intensive study of a selected topic. Primary emphasis on supervised research on various aspects of the topic. Enrollment limited to juniors and seniors majoring in history.

4993 Honors Thesis
3 hours credit. Prerequisites: Enrollment limited to candidates for Honors in History during their last two semesters; completion of honors examination and consent of the Honors College.
Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval.

Honors (HON)
Honors College

2201 Honors Community Service
1 hour credit. Prerequisite: Enrollment in the Honors College or consent of instructor.
Supervised community service experience relevant to an Honors education. May be repeated for credit, but not more than 3 semester credit hours will apply to a bachelor's degree.

3021 Honors Essay Writing
1 hour credit. Prerequisites: WRC 1013 and WRC 1023, enrollment in the Honors College, and consent of instructor.
A special Honors course designed to allow students to receive credit for work on writing essays for competitions. Involves substantial rewriting. May be repeated for credit, but not more than 3 semester credit hours will apply to a bachelor's degree.

3223 Honors Seminar in Social & Behavioral Sciences
(3-0) 3 hours credit. Prerequisite: Enrollment in the Honors College or consent of instructor.
Interdisciplinary seminar that explores broad topics and themes in the social and behavioral sciences. May be repeated for credit when topics vary.

3233 Honors Seminar in Arts & Humanities
(3-0) 3 hours credit. Prerequisite: Enrollment in the Honors College or consent of instructor.
Interdisciplinary seminar that explores broad topics and themes in arts and humanities. May be repeated for credit when topics vary.

3243 Honors Seminar in Business & the Professions
(3-0) 3 hours credit. Prerequisite: Enrollment in the Honors College or consent of instructor.
Interdisciplinary seminar that explores broad topics and themes in business and the professions. May be repeated for credit when topics vary.

3253 Honors Seminar in the Sciences
(3-0) 3 hours credit. Prerequisite: Enrollment in the Honors College or consent of instructor.
Interdisciplinary seminar that explores broad topics and themes in the sciences. May be repeated for credit when topics vary.

3301 Graduate School Workshop
(1-0) 1 hour credit. Prerequisite: Enrollment in the Honors College or consent of instructor.
A special workshop designed to prepare undergraduate students for admission to graduate school, with special emphasis on admission to Ph.D. programs. Topics include selecting a graduate program, preparing an application packet, writing the personal statement, and preparing for the Graduate Record Examination.

3501 Honors Capstone Exploration
(1-0) 1 hour credit. Prerequisite: Enrollment in the Honors College or consent of instructor.
Course designed to help students develop an understanding of what a thesis project is, what resources are necessary to complete the project, and identify a topic and a faculty thesis advisor. Students are encouraged to take this course in the first semester of their junior year. (Formerly titled "Honors Thesis Exploration Seminar.")

3513 Policy-Making Process
(3-0) 3 hours credit. Prerequisite: Enrollment in the UT System Archer Fellows Program.
This course will focus on the role of Congress and the President in the policy-making process. The course will use a variety of sources (academic texts, newspaper and journal articles, Web sites, blogs, advocacy papers) to compare textbook and "real world" versions of how policy is made in Washington, D.C.

3523 Beyond Congress and the White House
(3-0) 3 hours credit. Prerequisite: Enrollment in the UT System Archer Fellows Program.
This course is designed to help students understand power in our nation's capital and, especially, power that lies outside Congress and the White House. Students will study Washington, D.C., by making visits to local sites, as they examine complex issues, such as the use of DDT to combat malaria, the relationship between democracy and war, and the future of the Internet.

3533 Advocacy in Applied Settings
(3-0) 3 hours credit. Prerequisite: Enrollment in the UT System Archer Fellows Program.
This course will provide an introduction to the issues individuals face when placed in the role of being advocates for an issue, idea, or even themselves. The goal of the course is for students to learn about advocacy in ways that they can apply to their internship settings.

4913 Honors Independent Study
3 hours credit. Prerequisite: Enrollment in the Honors College or consent of instructor.
Independent reading, research, and writing under the direction of a faculty member. Designed as preparation for completion of an Honors Thesis. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933,6 Honors Internship
3 or 6 hours credit. Prerequisite: Enrollment in the Honors College or consent of instructor.
Supervised experience in a professional setting that provides the opportunity to integrate theory and practice programs relevant to the student's degree program and honors experience. May be repeated for credit in a subsequent semester, but not more than 6 semester credit hours of internship will apply to a bachelor's degree.

4941 Honors Leadership
1 hour credit. Prerequisite: Enrollment in the College of Business Leadership Challenge program.
Supervised leadership experience relevant to an Honors education. Usually involves planning and designing experiences for new Honors students.

4993 Honors Capstone Project
3 hours credit. Prerequisite: Enrollment in the Honors College or consent of instructor.
Supervised research and preparation of an Honors Capstone project for the purpose of earning Highest Honors. May be repeated once for credit. (Formerly titled "Honors Thesis.")

Humanities (HUM)

Department of Philosophy and Classics, College of Liberal and Fine Arts

2093 World Religions [TCCN: PHIL 1304.]
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Examination of the origins, teachings, development, and philosophical foundations of the world's chief religious movements, such as Hinduism, Buddhism, Shintoism, Confucianism, Taoism, Sikhism, Jainism, Islam, Zoroastrianism, Judaism, and Christianity. (Formerly HUM 3093. Credit cannot be earned for both HUM 2093 and HUM 3093.)

3013 History of Ideas
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Survey of the development and influence of major philosophical, scientific, and aesthetic conceptions from ancient times to the present.

3023 The Medieval World
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Interdisciplinary investigation of medieval thought and culture as exemplified in major works of literature, philosophy, theology, and history.

3033 Renaissance Ideas
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Interdisciplinary investigation of Renaissance thought and culture, as exemplified in major works of literature, philosophy, history, theology, and fine arts.

3043 Classicism and Enlightenment
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Interdisciplinary investigation of thought and culture in the later 17th and the 18th centuries, as exemplified in major works of philosophy, literature, and the fine arts.

3053 The Romantic Age
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Interdisciplinary investigation of the development of ideas in literature, philosophy, art, politics, and society at the end of the 18th and beginning of the 19th century.

3063 The Modern World
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Interdisciplinary investigation of modern thought in the late 19th and 20th centuries, as exemplified in major works of philosophy, literature, and the fine arts.

3103 American Film
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Survey of the art, history, development, and major critical approaches to American film with attention to such topics as classic and revisionist film styles, cinematic apparatus, the history and development of film genres, and film as a part of American culture.

3203 Film Genres
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Intensive study of a particular film genre, such as Western, science fiction, film noir, or documentary. May be repeated for credit when topics vary.

3213 The Christian Classics
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
The opportunity for an intensive survey of selected works of writers studied in the context of Christian thought.

3223 The Bible as Literature
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Offers the opportunity to survey major themes, stories, and motifs in the Old and New Testament, with emphasis on those elements fundamental to Western culture.

3303 Major Filmmaker
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Intensive study of the work of a particular major filmmaker, such as Alfred Hitchcock, Akira Kurosawa, Orson Welles, Charles Chaplin, or Ingmar Bergman. May be repeated for credit when topics vary.

3403 Literature into Film
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Examination of what distinguishes and links the media of cinema and written literature. Case studies in adaptation of novels, short stories, and plays into film.

3623 Topics in National Cultures and Civilizations
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
The cultural life of the respective geographic regions and social strata of individual nations of Europe and America, as reflected in and interpreted by their artistic production. Individual topics may focus on a single nation or several nations. May be repeated for credit when topics vary.

3703 Topics in Popular Culture
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Intensive study of a particular period (e.g., the ’20s, the ’60s, the Middle Ages), medium (e.g., television, hip hop, radio), or event (e.g., 9/11, the Alamo, Kennedy assassination) as shaped by and shaper of the popular imagination. May be repeated for credit when topics vary.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student’s advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor’s degree.

4953 Special Studies in Humanities
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor’s degree.

4973 Senior Seminar in Humanities
(3-0) 3 hours credit. Prerequisites: 12 upper-division semester credit hours in humanities, classics, or philosophy.
Undergraduate seminar limited to students in the humanities emphasis in their senior year. Content varies with each instructor. May be repeated once for credit when topics vary. (Formerly titled "Seminar for Humanities Majors.")

4991-3 Honors Thesis
1 to 3 hours credit. Prerequisites: Consent of instructor and Department Scholarship and Honors Committee; enrollment in or completion of HUM 4973.
Supervised research and preparation of an Honors Thesis for the purpose of earning Humanities Honors. May be repeated once with advisor approval.

Human Neuroscience (HNSC)

College of Liberal and Fine Arts

1013 Introduction to Human Neuroscience
(3-0) 3 hours credit.
This course introduces students to system level human neuroscience using noninvasive imaging methodology (MRI, PET, TMS) as the primary tool to explore different motor, perceptual (e.g., vision, audition), and cognitive systems (e.g., attention, memory) in the human brain.

2013 Disorders of the Human Nervous System
(3-0) 3 hours credit. Prerequisite: HNSC 1013.
This course explores the mechanism of action of disorders of the human nervous system (e.g., autism, aphasia, motor disorders). Based on a system level approach to the human brain, each disorder is introduced with attention to the primary behavioral symptoms. The application of noninvasive brain imaging to explore the mechanism of action of disease, and diagnosis and treatment of disorders is covered whenever possible.

3013 Introduction to Imaging Meta-Analysis
(3-0) 3 hours credit. Prerequisites: HNSC 1013 and a course in statistics.
This course is designed to provide students with the tools to conduct system level meta-analysis of brain imaging data. Students are introduced to meta-analysis, including the analytic tools of this statistical methodology. Students use an existing database of imaging data to conduct a meta-analysis in an area of interest.

Information Systems (IS)

Department of Information Systems and Cyber Security, College of Business

1403 Business Information Systems Fluency [TCCN: BCIS 1305.]
(3-0) 3 hours credit.
Required course for all students majoring in Business at UTSA. This three-unit course concentrates on a set of core computing skills that are essential to student success, such as using e-mail, word processing, spreadsheets, basic data management, presentation software and on- and off-campus Internet resources. This is a Web-based course. Instructions and exams are accomplished through the use of a computer.

1503 Introduction to Cyber Security
(3-0) 3 hours credit.
An introduction to the principles and best practices for cyber security. This course addresses the fundamental aspects of computer and network security. Issues concerning home computer security, internet security, privacy, viruses and worms, spam, and ethics will be included in this course. Public Component software will be used to illustrate the principles discussed in the class.

2031 Introduction to Computer Concepts for Information Systems Laboratory
(0-2) 1 hour credit. Prerequisite: Concurrent enrollment in IS 2033, or completion of an IS 2033 equivalent with a grade of "C–"or better.
Laboratory accompanies IS 2033. Uses object-oriented programming language and software development tools to develop basic applications that underline the concepts learned in IS 2033.

2033 Introduction to Computer Concepts for Information Systems
(3-0) 3 hours credit. Prerequisites: IS 1403 with a grade of "C–"or better and concurrent enrollment in IS 2031.
An introduction to programming with an object-oriented language. Addresses basic elements of OOP (object-oriented programming), including control structures, classes and objects, class behavior, arrays, GUIs (graphical user interfaces), file input/output, exception handling, and object-oriented design.

2041 Intermediate Object-Oriented Programming Laboratory
(0-2) 1 hour credit. Prerequisite: Concurrent enrollment in IS 2043, or completion of an IS 2043 equivalent with a grade of "C–" or better.
Laboratory accompanies IS 2043. Laboratory uses object-oriented programming language and software development tools to develop basic applications that underline the concepts learned in IS 2043. (Formerly titled "Data Structures and File Processing Laboratory.")

2043 Intermediate Object-Oriented Programming
(3-0) 3 hours credit. Prerequisites: IS 2033 with a grade of "C–" or better and concurrent enrollment in IS 2041.
An object-oriented programming course designed to enforce introductory object-oriented principles learned in IS 2033 and focus on concepts including exception handling, data structures, searching and sorting, recursion, generic collections, file processing, and GUIs (graphical user interfaces). An object-oriented language like Java will be used to develop applications using these concepts. (Formerly titled "Data Structures and File Processing.")

3003 Principles of Information Systems for Management
(3-0) 3 hours credit. Prerequisite: IS 1403 with a grade of "C–" or better.
An analysis of managerial/organizational information needs. Systematic procedures for developing information systems are covered. Includes coverage of hardware and software tools, information structures, and formal problem-solving techniques. Issues related to organizational controls, security, and globalization as a result of changing technologies are discussed. Cases will be assigned to illustrate the use of specific tools and techniques for problem solving.

3033 Operating Systems
(3-0) 3 hours credit. Prerequisites: IS 2041 and IS 2043 with a grade of "C–" or better, or consent of instructor.
This course examines the role of computer operating systems in the overall vulnerability of the network. A comparison of the more popular operating systems will be used to illustrate the concepts to the class.

3063 Database Management for Information Systems
(3-0) 3 hours credit. Prerequisites: IS 2041 and IS 2043 with a grade of "C–" or better.
A study of database management systems (DBMS) features, functions, and architecture, including logical design, data models, normalization, object-oriented data, and database administration. A DBMS product will be used to illustrate principles.

3073 Application Development
(3-0) 3 hours credit. Prerequisites: IS 2041 and IS 2043 with a grade of "C–" or better.
A study of the use of information systems techniques to solve managerial problems. Includes cases where students are asked to design and implement information systems that address various classes of analytic problems. Principles of decision theory are addressed.

3083 Computer Graphics
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Emphasis on the theory of animation and multimedia design of computer-generated images. Popular software packages will be used to demonstrate concepts and create animation and multimedia projects. Video and audio technologies, as well as creating animation and multimedia pages for the Internet, will be included.

3413 Introduction to Telecommunications for Business
(3-0) 3 hours credit. Prerequisites: IS 3003 and 6 hours of IS coursework with a grade of "C–" or better, or consent of instructor.
Includes an in-depth look at basic telecommunications terminology and concepts. Introduction to voice and data networks, signaling and multiplexing. Network topologies and protocol fundamentals and architectures are presented and compared. Frame relay, X.25, and ATM packet technologies are introduced. Network security fundamentals are explored.

3423 Network Security
(3-0) 3 hours credit. Prerequisite: IS 3413 with a grade of "C–" or better or consent of instructor.
The course provides a foundation in networking technologies that are core to creating secure networks. Topics included in this course are basic cryptography, secure networking protocols, logical and physical security management and security devices. Relation between these technologies and operational and implementation issues for these technologies will also be discussed. (Formerly titled "Secure Network Design.")

3433 Introduction to Digital Forensics
(3-0) 3 hours credit.
The digital forensic investigation process involves organizational preparation, incident response, data collection, data analysis, and communication of findings. This course will teach students how to prepare for incidents, how to respond to incidents, and how to reliably collect digital data. Students will be introduced to various types of storage media and sources of volatile data. Students will also be introduced to fundamental legal issues related to digital forensics. (Same as ACC 3433. Credit cannot be earned for both IS 3433 and ACC 3433.)

3453 Networking Fundamentals
(3-0) 3 hours credit. Prerequisite: IS 3413 with a grade of "C–" or better or consent of instructor.
This course will focus on the principles of telecommunication with particular emphasis on networking. Networking and transmission protocols will be emphasized. Both IPv4 and IPv6 will be included. This class will also include the hardware side of the network. The role of servers, switches and routers will be included. Security will be introduced.

3503 Attack and Defend – An Introduction to Information Assurance
(3-0) 3 hours credit.
An introduction to information assurance. This survey course will present common ways that hackers attack a network and how to defend against the attacks. It will also include related subjects such as how to protect data, encryption, physical security, and hiding data. The course is a "hands-on" class and students will gain experience with readily available software packages. This course is intended for non-Infrastructure Assurance majors. Information Systems and Infrastructure Assurance majors cannot use IS 3503 toward their degree requirements. (Same as ACC 3503. Credit cannot be earned for both IS 3503 and ACC 3503.)

3513 Information Assurance and Security
(3-0) 3 hours credit. Prerequisite: IS 3413 with a grade of "C–" or better or consent of instructor.
This course provides an in-depth presentation of information assurance topics such as fraud, eavesdropping, traffic analysis, intrusion detection and prevention, hacking, viruses, and cryptography. Risk management will also be discussed. (Formerly IS 4453. Credit cannot be earned for both IS 3513 and IS 4453.)

3523 Intrusion Detection and Incident Response
(3-0) 3 hours credit. Prerequisite: IS 3513 with a grade of "C–" or better.
This course provides an in-depth look at intrusion detection methodologies and tools and the approaches to handling intrusions when they occur; examines the laws that address cybercrime and intellectual property issues; and includes a study of proper computer and network forensics procedures to aid in the identification and tracking of intruders and in the potential prosecution of criminal activity.

3533 Cyber Law
(3-0) 3 hours credit.
An introductory course in laws and legal issues that affect law enforcement, businesses, and investigators related to the preservation, collection, and analysis of digital data. Students will examine computer crime laws, civil and criminal laws that often involve electronic evidence, search and seizure of electronic evidence, judicial issues involving the admissibility of electronic evidence and related testimony, and legal issues involved with electronic surveillance.

4033 Network Operations
(3-0) 3 hours credit. Prerequisite: IS 3453 with a grade of "C–" or better or consent of instructor.
The course will explore the fundamentals of operating a network. Issues to be included are physical security, electrical and air conditioning issues, data storage and retention, and backup and redundancy of data. Other topics include floor loading, patch management, converting user requirements to system requirements and disaster recovery.

4053 Systems Analysis and Design
(3-0) 3 hours credit. Prerequisites: IS 3063 with a grade of "C–" or better and MGT 3003.
An introduction to systems theory and development techniques. Topics include problem definition, object-oriented design, issues for cost/benefit analyses, and CASE tools.

4063 Advanced Topics in Information Systems
(3-0) 3 hours credit. Prerequisites: MGT 3003 and 15 semester credit hours of information systems courses (excluding IS 1403 and IS 3003).
Survey of recent developments in information technology. Analysis will focus on applications in the business community and theoretical developments that relate to those applications. Ordinarily taken during semester of graduation.

4073 The Information Resource
(3-0) 3 hours credit. Prerequisites: IS 3003 with a grade of "C–" or better, MGT 3003, and MGT 3013.
A study of the principles and concepts involved in the management of organizational information systems resources. Topics include project control, CIO functions, information systems planning, and strategic impact of information systems, multinational organizations, and relevant legal, professional, and ethical issues.

4103 Business Process Management and Control
(3-0) 3 hours credit. Prerequisite: IS 3003.
Business professionals are frequently responsible for designing, implementing, supporting and managing technology-based business processes in organizations. In order to accomplish those tasks, these professionals must understand the business processes that support an organization and how they are controlled. This course contributes to the student's understanding of how key business processes are managed, controlled and integrated in enterprise resource planning systems. SAP will be used to illustrate the concepts discussed in the class. (Same as ACC 4103. Credit cannot be earned for both IS 4103 and ACC 4103.)

4143 Wide Area Networks
(3-0) 3 hours credit. Prerequisites: IS 3413 with a grade of "C–" or better and MGT 3003 or consent of instructor.
This course explores the telecommunication technologies used in wide area networks. Technologies such as frame relay, ATM, TCP/IP, and voice over IP will be studied. The role of the common carriers will also be discussed. Secure network traffic over TCP/IP will be included.

4153 Web Site Development
(3-0) 3 hours credit. Prerequisites: IS 3073 with a grade of "C–" or better and MGT 3003 or consent of instructor.
A study of issues related to the use of electronic networks to facilitate inter- and intra-organizational business activities. The principles of Web site design from the consumer and the information systems points of view will be presented. The course will also include the development of a Web site. (Formerly titled "Electronic Commerce.")

4163 Advanced Programming Concepts
(3-0) 3 hours credit. Prerequisites: IS 3063 with a grade of "C–" or better and MGT 3003.
A survey of programming languages and application development facilities. Topics may include procedural languages as well as very high-level languages, end-user application development languages, and object-oriented languages.

4183 Advanced Database Concepts
(3-0) 3 hours credit. Prerequisites: IS 3063 with a grade of "C–" or better and MGT 3003.
In-depth consideration of concepts governing the design and management of database systems. Topics include database design, distributed databases, database administration, object-oriented data modeling, and performance evaluation.

4203 Business Process Re-engineering
(3-0) 3 hours credit. Prerequisites: IS 4153 and MGT 3003 or consent of instructor.
The course examines the role of e-commerce in changing the business models. The use of the Internet as a way of changing the traditional models for marketing and manufacturing will be discussed. The focus of the course will be new product design, new business practices, and product life cycle, which are all affected by the use of the Internet and the new business models that are being developed.

4223 Emerging Network Technologies
(3-0) 3 hours credit. Prerequisite: IS 3453 with a grade of "C–" or better or consent of instructor.
Cloud computing has become popular in industry. This class will look at what it is and how it works. How cloud computing interfaces with current networks, computing ability and storage requirements will be discussed. Security issues will be an important part of the course. Other topics include virtual machines, storage area networks and remote systems management.

4463 Secure Electronic Commerce
(3-0) 3 hours credit. Prerequisites: IS 3513 with a grade of "C–" or better and MGT 3003 or consent of instructor.
The security issues related to electronic commerce will be discussed in this course. The legal environment of e-commerce, public and private key encryption, digital signatures, authentication, and third party certificates are topics that will be included.

4473 Information Assurance Policy
(3-0) 3 hours credit. Prerequisites: IS 3413 with a grade of "C–" or better, MGT 3003, and one 3-semester-credit-hour security course, or consent of instructor.
There are many policy issues, within the firm and at various levels of government, that affect information assurance. This course will examine how these policies affect electronic security. Subjects will include privacy of information, intellectual property protection, globalization of information systems, and other policy matters. The protection and control of secured information will also be discussed.

4483 Digital Forensic Analysis I
(3-0) 3 hours credit. Prerequisites: IS 3513 with a grade of "C–" or better and MGT 3003.
An introductory course in collecting, examining, and preserving evidence of computer crimes. This course examines the issues, tools, and control techniques needed to successfully investigate illegal activities facilitated through the use of information technology. The tools of collecting, examining, and evaluating data in an effort to establish intent, culpability, motive, means, methods, and loss resulting from e-crimes will be examined. (Formerly titled "Cyber Forensics.")

4493 Access Controls
(3-0) 3 hours credit. Prerequisites: IS 3513 with a grade of "C–" or better and MGT 3003.
An introductory course in controlling access to information. Emphasis will be on access to both files and facilities. Various methods of access requiring different levels of identification, authentication, authorization, and accountability will be discussed. Authentication devices, such as fingerprint and retinal scanners, will be examined.

4513 Cyber and Physical Systems
(3-0) 3 hours credit. Prerequisites: IS 3513 with a grade of "C–" or better and MGT 3003 or consent of instructor.
Many of the critical infrastructure systems contain a system control and data acquisition (SCADA) component. Frequently, the control systems are remotely accessed and therefore becomes the focal point for attack. This course examines the control system components from the standpoint of vulnerability and protection. (Formerly titled "System Control and Data Acquisition.")

4523 Digital Forensic Analysis II
(3-0) 3 hours credit. Prerequisite: IS 4483.
This course examines advanced digital forensic analysis topics, tools, techniques, and control mechanisms. Advanced topics include operating system artifacts, non-standard file systems, mobile devices, malware, and volatile memory. Students will gain experience with state-of-the-art forensics tools and techniques needed to successfully investigate illegal activities perpetuated through the use of information technology.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for the required forms.
Independent research in an information systems topic under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933 Internship in Information Systems
3 hours credit. Prerequisites: MGT 3003, 9 semester credit hours of information systems courses (excluding IS 1403 and IS 3003), an overall 3.0 grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms.
The opportunity to gain knowledge through experiential activities in professional life. Joint cooperation with business and governmental institutions in structuring and monitoring work experience aimed at supplementing the classroom learning process. May not be repeated for credit.

4951-3 Special Studies in Information Systems
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisites: MGT 3003 and consent of instructor.
An organized course offering specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Thesis
3 hours credit. Prerequisite: MGT 3003. Enrollment limited to students applying for Honors in Information Systems (see page 44).
Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval. No more than 3 semester credit hours may apply toward information systems major requirements.

Interdisciplinary Studies (IDS)

Department of Interdisciplinary Learning and Teaching, College of Education and Human Development

2013 Introduction to Learning and Teaching in a Culturally Diverse Society
(3-0) 3 hours credit.
Introductory course for all prospective teachers. This course is designed to help students understand the complexity of K–12 teaching in our contemporary society. Students will examine the history, policies and practices that have shaped schooling in the United States. Contemporary dilemmas of equity, the achievement gap, and other marginalizing practices will be considered to better understand the culture of schooling and classrooms, and the complex role of the teacher. Emphasis will be on, but not limited to, students as learners, curriculum standards and assessment, effective teaching practices for diverse learners, professionalism, and the sociopolitical challenges confronting today's teachers. Field experience required.

2083 Technology for Learning and Teaching
(3-1) 3 hours credit.
This course focuses on integrating instructional technology into learning and teaching environments. Students will investigate theoretical and practical issues surrounding the use of instructional technologies. Participants will gain practical experience in curriculum planning that takes specific advantage of technology to enhance and extend learning. Course requirements are aligned with national and state technology standards. (Formerly titled "Technology for Liberal Arts and Social Sciences.")

2103 The Individual, Family, and Community [TCCN: TECA 1303.]
(3-0) 3 hours credit.
An exploration of the complex social forces that are present in U.S. society including but not limited to race, class, and gender. Critical and analytical thinking will be emphasized.

2113 Society and Social Issues
(3-0) 3 hours credit.
An investigation of the social complexities of identity politics and diversity in an age of globalization. Topics include demographic trends, international relations, geography and spatial relations of identity, ethnicity, gender, economics, global politics, citizenship, social change, poverty, technology, eco-justice, and cultural diversity. Knowledge of the global community and its connection to the global phenomena will be emphasized.

2203 World Civilization to the Fifteenth Century [TCCN: HIST 2321.]
(3-0) 3 hours credit.
A general introduction to World History from the Late Neolithic to the Columbian Encounter in the late 15th century C.E. (Common Era). Broad overview of the pattern of development of major civilizations and their interactions, with closer attention given to those events, institutions, beliefs, and practices that involved and affected large numbers of people and had lasting significance for later generations. (Same as HIS 2123. Credit cannot be earned for both IDS 2203 and HIS 2123.)

2213 World Civilization since the Fifteenth Century [TCCN: HIST 2322.]
(3-0) 3 hours credit.
A general introduction to World History since the late 15th century C.E. (Common Era). Broad overview of the pattern of development of major civilizations and their interactions, with closer attention to those events, institutions, beliefs, and practices that involved and affected large numbers of people and laid foundations of the modern world. (Same as HIS 2133. Credit cannot be earned for both IDS 2213 and HIS 2133.)

2303 World Literature I: Through the Sixteenth Century
[TCCN: ENGL 2332.]
(3-0) 3 hours credit. Prerequisite: WRC 1023 or an equivalent.
This course is an exploration of sources and continuing traditions in World Literatures in their various cultural and aesthetic contexts from their origins through the 16th century. It includes extensive reading of representative examples of the major oral and written literatures including, but not limited to, poetry, narratives, and drama and examines how these literatures influenced contemporary experience. The readings will be studied from multiple perspectives and will be related to comparable aesthetic expressions in music and the fine arts.

2313 World Literature II: Since the Sixteenth Century
[TCCN: ENGL 2333.]
(3-0) 3 hours credit. Prerequisite: WRC 1023 or an equivalent.
This course is an exploration of sources and continuing traditions in World Literatures in their various cultural and aesthetic contexts from the beginning of the 16th century to the present. It includes extensive reading of representative examples of the major oral and written literatures including, but not limited to, poetry, narratives, and drama and examines how these literatures influenced contemporary experience. The readings will be studied from multiple perspectives and will be related to comparable aesthetic expressions in music and the fine arts.

2403 Physical Science
(3-0) 3 hours credit. Prerequisites: Completion of Mathematics and Science Core Curriculum requirements.
This conceptually-based course provides nonscience majors with an interdisciplinary survey of topics in physics and chemistry. Major themes include energy, forces, and atomic and subatomic interactions. Specific topics may include, but are not limited to: density, motion, work, power, waves, thermodynamics, electromagnetism, relativity, atomic and subatomic interactions, as well as acids and bases. (Formerly IDS 3203. Credit cannot be earned for both IDS 2403 and IDS 3203. Credit cannot be earned for both IDS 2403 and IDS 3234.)

2413 Earth Systems Science
(3-0) 3 hours credit. Prerequisites: Completion of Mathematics and Science Core Curriculum requirements.
This course provides a look at the Earth system as a whole. Emphasis will be on the interrelationships between biological, geological, hydrological, climatological, and human systems on local, continental and global scales. The interactions between the hydrosphere, atmosphere, biosphere, cryosphere, and lithosphere that together make up the Earth system will be studied. This interdisciplinary view of our planet highlights the manner in which all systems of the Earth control or influence each other. (Formerly IDS 3213. Credit cannot be earned for both IDS 2413 and IDS 3213. Credit cannot be earned for both IDS 2413 and IDS 3224.)

3003 Science and Humanity
(3-0) 3 hours credit. Prerequisites: IDS 2403 and IDS 2413.
An exploration of the interdisciplinary nature of scientific and mathematical inquiry and sociocultural contexts across time. This course uses an integrated approach to studying the nature of scientific and mathematical inquiry, knowledge, and theory development, as well as relationships between science, mathematics, and technology and their influence on humanity.

3013 Diversity, Equity, and the Social Sciences
(3-0) 3 hours credit. Prerequisite: IDS 2113.
An exploration of knowledge and the construction of knowledge in the social sciences. The course emphasizes an in-depth inquiry of diversity and equity within the context of the social sciences and their impact on the individual, community, and society. This course examines the nature of interdisciplinary knowledge in social science research and the ways social researchers collect, analyze, understand, and disseminate knowledge and data about contemporary issues, events, and individuals in the community, state, nation, and world. Emphasis will also be on critical reflection and dialogue, civic responsibility, and leadership. A service-learning experience will be integrated into the course.

3123 Culture, Literature, and Fine Arts
(3-0) 3 hours credit.
An interdisciplinary study of local culture through diverse genres including investigation of cultural expressions across literature and the arts, music, film and other forms of popular culture. This course, addressing both historical and contemporary genres, will foster interdisciplinary inquiry, knowledge of primary sources, theory development, and critical reflection and analysis of identities and their representations across the arts. Museum experiences, local culture, and the use of primary resources will be integrated into this course.

3201 Inquiry in Physical Science
(0-3) 1 hour credit. Prerequisites: Completion of Mathematics and Science Core Curriculum requirements.
Familiarizes students with laboratory tools and techniques and allows them to form a better understanding of topics in physics and chemistry by experimentation. Major themes include energy, forces, and atomic and subatomic interactions. (Credit cannot be earned for both IDS 3201 and IDS 3234.) (Formerly titled "Advanced Physical Science Laboratory.")

3211 Inquiry in Earth Systems Science
(0-3) 1 hour credit. Prerequisites: Completion of Mathematics and Science Core Curriculum requirements.
Course familiarizes students with laboratory and field tools, techniques, and safety issues and allows them to form a better understanding of major topics in Earth systems science, especially in the areas of hydrology, soils, atmosphere, land cover, and GPS. Students will participate in scientific inquiry investigations of the Earth's systems and components. (Credit cannot be earned for both IDS 3211 and IDS 3224.) (Formerly titled "Advanced Earth Systems Science Laboratory.")

3224 Earth Systems Science Investigations
(2-4) 4 hours credit. Prerequisites: Completion of Mathematics and Science Core Curriculum requirements.
Integrated online lecture and laboratory course that provides a look at the Earth system as a whole. Emphasis will be on the interrelationships between biological, geological, hydrological, and human systems on local, continental and global scales. The interactions between the hydrosphere, atmosphere, biosphere, and lithosphere that together make up the Earth system will be studied. This interdisciplinary view of our planet highlights the manner in which all systems of the Earth influence each other. Credit for IDS 3224 is equivalent to credit for both IDS 2413 and IDS 3211. Credit cannot be earned for IDS 2413 (or IDS 3213) and IDS 3211 if this course is taken.

3234 Investigations in Physical Science
(2-4) 4 hours credit. Prerequisites: Completion of Mathematics and Science Core Curriculum requirements.
Integrated online lecture and laboratory course that provides learners with varied opportunities to build an understanding of intricate relationships commonly addressed in the fields of physics and chemistry, and to evaluate these relationships as a holistic system. Explorations of conceptual ideas such as electromagnetism will include varied methods of engagement, including hands-on and minds-on experimentation. Credit for IDS 3234 is equivalent to credit for IDS 2403 and IDS 3201. Credit cannot be earned for IDS 2403 (or IDS 3203) and IDS 3201 if this course is taken.

3653 Music and Related Arts
(3-1) 3 hours credit.
Study of the essential concepts of music and visual arts. An understanding of the cognitive content of each art will be reinforced by a variety of activities which relate directly to each artistic discipline. Similarities and differences in the various arts will be investigated in terms of basic elements, means of creating, and experience.

3713 Interdisciplinary Inquiry
(3-0) 3 hours credit. Prerequisites: IDS 2113, IDS 3003, IDS 3013, WRC 1013, and WRC 1023.
A study of thinking in the sciences, social studies, mathematics, language arts, and fine arts through interdisciplinary investigations. Course experiences include modeling, practice, and analysis of ways of inquiring in the several subject areas, and seeking their implications for interdisciplinary inquiries. Through scholarly research and inquiry, students will demonstrate their ability to engage in interdisciplinary inquiry. (Formerly IDS 2713. Credit cannot be earned for both IDS 3713 and IDS 2713.)

4913 Independent Study
3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4953 Special Studies in Interdisciplinary Studies
(3-0) 3 hours credit.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Thesis
3 hours credit. Prerequisites: Enrollment limited to candidates for honors in the Department of Interdisciplinary Learning and Teaching during the last two semesters; consent of the Honors College.
Supervised research and preparation for an honors thesis. May be repeated once with advisor's approval.

Interior Design (IDE)
College of Architecture

2116 Design III
(0-12) 6 hours credit. Prerequisites: Enrollment as an Interior Design major and concurrent enrollment in IDE 2143 or permission of instructor.
Design of interior environments with emphasis on development of design process, and a focus on interior architectural elements and concepts, spatial organization, and structure. Includes introduction to programming, contextual relationships, precedent, human factors, and digital media.

2126 Design IV
(0-12) 6 hours credit. Prerequisites: IDE 2116 and concurrent enrollment in IDE 3153.
Design of interior environments with emphasis on development of design processes, interior architectural elements, materials, assemblies and concepts, and a focus on spatial organization, structure, and detail. Includes introduction to life safety concerns, building codes, universal design, and zoning regulations. Further development of digital media.

2143 Interior Materials and Assemblies I
(3-0) 3 hours credit. Prerequisite: COA 1133.
The study of materials and assemblies as used in interior environments with an emphasis on qualities, characteristics, and production, and a focus on detail.

2423 History of Design: Renaissance through Nineteenth Century
(3-0) 3 hours credit. Prerequisite: ARC 2413.
Introduction to the art, architecture, interior design, and the decorative arts from the fifteenth to the twentieth century. Explores the varied ways that design reflects and serves the social, religious, and political life in the Western and non-Western world. Concurrent enrollment in IDE 2126 is recommended for Interior Design majors. (Same as ARC 2423. Credit cannot be earned for both IDE 2423 and ARC 2423.)

3013 Color and Light
(3-0) 3 hours credit.
Studies of psychological and physiological effects of color and light in the built environment. Light as a form determinant of interior space. Introduction to artificial illumination design.

3153 Interior Materials and Assemblies II
(3-0) 3 hours credit. Prerequisite: IDE 2143 or consent of instructor.
The continuation of the study of materials and assemblies as used in interior environments with an emphasis on lighting systems, textiles, furniture systems, and specifications, and a focus on qualities, characteristics, production, and detailing.

3236 Interior Design Studio I
(0-12) 6 hours credit. Prerequisites: IDE 2126 or concurrent enrollment, IDE 2143, and IDE 2423.
Interior design as the application of building construction systems and materials as key components in the art of shaping interior volumes. Project research and programming methods are applied and furniture selections are explored and integrated within a spatial context.

3246 Interior Design Studio II
(0-12) 6 hours credit. Prerequisite: IDE 2423 and ARC 3343.
Interior design focused on integrating mechanical, acoustical, and lighting systems through a consideration of the relationship between human activities and various interior environments.

3613 History of Modern Design
(3-0) 3 hours credit. Prerequisites: ARC 2413, IDE 2423, WRC 1013, and WRC 1023.
History of the Modern art, architecture, interior design, and decorative arts of the twentieth century with special emphasis on social, aesthetic, theoretical, and technical forces that it represents and supports. Concurrent enrollment in IDE 3246 is recommended.

4213 Furniture Design and Construction
(0-6) 3 hours credit. Prerequisite: ARC 3216 or IDE 3236.
Focuses on the essential qualities of the elements of furniture design and construction, emphasizing human factors and the use of materials and connections.

4266 Systems Integration Studio
(0-12) 6 hours credit. Prerequisites: IDE 3153, IDE 3246, and ARC 3353.
Design and documentation of interior environments focusing on system integration and articulation of building assemblies. Includes complex programming, life safety issues, thermal control, lighting, electrical, acoustics, and water and waste management systems. (Formerly titled "Interior Design Systems Studio.")

4276 Capstone Studio
(0-12) 6 hours credit. Prerequisite: IDE 4413.
The design of a capstone project. Students generate and develop creative and detailed design solutions for specific programmatic needs. Self-directed project guided by faculty. (Formerly titled "Interior Design Topics Studio.")

4333 Practicum
3 hours credit. Prerequisites: IDE 3246 and consent of instructor.
Offers students majoring in Interior Design participation in a variety of design development concerns. Students work under supervision in an approved internship to gain knowledge of their respective professional fields.

4413 Capstone Preparation
(3-0) 3 hours credit.
Preparation for IDE 4276 Capstone Studio. Includes project selection and scope, precedent studies, marketing analysis, and project concept.

4423 Topics in Design Theory
(3-0) 3 hours credit. Prerequisite: IDE 2423.
Introduction to design theories. Readings are drawn from a diversity of sources. The course includes a writing component and may be repeated for credit when topics vary.

4513 Practice and Ethics
(3-0) 3 hours credit. Prerequisite: IDE 2126.
A study of the currently applied ethical, legal, and professional criteria for the practice of interior design. Issues investigated include forms of practice, client relationships, team leadership, office organization, and project management. A job shadowing component will be included when possible.

4816 Study Abroad: Studio
(0-12) 6 hours credit. Prerequisite: Permission of instructor.
A studio associated with a study abroad program.

4823 Study Abroad: History/Theory
(3-0) 3 hours credit. Prerequisite: Permission of instructor.
A lecture/seminar course associated with a study abroad program; involves field trips.

4833 Study Abroad: Observational Drawing
(0-6) 3 hours credit. Prerequisite: Permission of instructor.
A drawing course associated with a study abroad program; involves field trips.

4911,3,6 Independent Study
1, 3, or 6 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Scholarly research under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, may apply to a bachelor's degree.

4953,6 Special Studies in Interior Design
(0-6, 0-12) 3 or 6 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours for IDE 4953 or 12 hours for IDE 4956, regardless of discipline, will apply to a bachelor's degree.

International Studies (INS)

Department of Political Science and Geography,
College of Liberal and Fine Arts

2403 Introduction to International Study
(3-0) 3 hours credit.
Examination of international and multicultural issues through the perspectives of core disciplines. Study includes lectures, discussions, reading and films on culture, culture shock, and cross-cultural communication; American and foreign values; language issues; and investigations of issues related to a particular nation and culture.

3763 Globalization
(3-0) 3 hours credit. Prerequisite: POL 1013.
This course examines normative and empirical issues in globalization debates, such as the role of states and non-state actors, the emergence of global civil society, patterns of international development, the influence of international integration on security, health, violence, and intercultural toleration, and the status of institutions for global justice. (Same as POL 3763. Credit cannot be earned for both INS 3763 and POL 3763.)

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933 Internship in International Studies
3 hours credit. Prerequisite: Consent of the internship coordinator.
Supervised experience relevant to International Studies within selected organizations at the local, state, national, or international levels. A maximum of 3 semester credit hours may be applied to the minor.

4953 Topics in International Studies
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Italian (ITL)

Department of Modern Languages and Literatures,
College of Liberal and Fine Arts

1014 Elementary Italian I [TCCN: ITAL 1411.]
(3-2) 4 hours credit.
Fundamentals of Italian offering the opportunity to develop listening, speaking, reading, and writing skills. Introduction to Italian culture.

1024 Elementary Italian II [TCCN: ITAL 1412.]
(3-2) 4 hours credit. Prerequisite: ITL 1014, the equivalent, an appropriate placement test score, or consent of instructor.
Fundamentals of Italian offering the opportunity to develop listening, speaking, reading, and writing skills. Further study of Italian culture.

2013 Intermediate Italian I [TCCN: ITAL 2311.]
(3-1) 3 hours credit. Prerequisite: ITL 1024, the equivalent, an appropriate placement test score, or consent of instructor.
Continued practice in developing listening, speaking, reading, and writing skills. Grammar and further study of Italian culture.

2023 Intermediate Italian II [TCCN: ITAL 2312.]
(3-1) 3 hours credit. Prerequisite: ITL 2013, the equivalent, an appropriate placement test score, or consent of instructor.
Continued practice in developing listening, speaking, reading, and writing skills. Grammar review and further study of Italian culture.

2333 Italian Literature in English Translation
(3-0) 3 hours credit.
Major works of Italian literature across time, genres, and movements. (Formerly ITL 3333. Credit cannot be earned for both ITL 2333 and ITL 3333.)

Japanese (JPN)

Department of Modern Languages and Literatures,
College of Liberal and Fine Arts

1014 Elementary Japanese I [TCCN: JAPN 1411.]
(3-2) 4 hours credit.
Fundamentals of Japanese offering the opportunity to develop basic speaking, listening, reading, and writing skills. Read and write Hiragana and Katakana. Introduction of Kanji and Japanese culture.

1024 Elementary Japanese II [TCCN: JAPN 1412.]
(3-2) 4 hours credit. Prerequisite: JPN 1014, the equivalent, the appropriate placement test score, or consent of instructor.
Fundamentals of Japanese offering the opportunity to develop basic speaking, listening, reading, and writing skills. Further study of Japanese culture and Kanji.

2013 Intermediate Japanese I [TCCN: JAPN 2311.]
(3-1) 3 hours credit. Prerequisite: JPN 1024, the equivalent, the appropriate placement test score, or consent of instructor. Continued opportunity to develop listening, speaking, reading, and writing skills through structural analysis of the Japanese language. Further study of Japanese culture and Kanji.

2023 Intermediate Japanese II [TCCN: JAPN 2312.]
(3-1) 3 hours credit. Prerequisite: JPN 2013, the equivalent, the appropriate placement test score, or consent of instructor. Continued opportunity to develop listening, speaking, reading, and writing skills through structural analysis of the Japanese language. Further study of Japanese culture and Kanji.

3023 Advanced Language Skills
(3-0) 3 hours credit. Prerequisite: JPN 2023, the equivalent, the appropriate placement test score, or consent of instructor. Offers the opportunity to develop advanced-level oral and written communication skills in the Japanese language, along with enhanced comprehension skills in listening and reading. May be repeated for credit when topics vary.

3053 Business Japanese
(3-0) 3 hours credit. Prerequisite: JPN 2023, the equivalent, the appropriate placement test score, or consent of instructor. Offers the opportunity to develop speaking, reading, and writing skills in business fields. Emphasis on Japanese business manners and business terminology.

4213 Topics in Japanese Culture
(3-0) 3 hours credit. Prerequisite: JPN 2023, the equivalent, the appropriate placement test score, or consent of instructor. Selected topics of Japanese culture, such as Modernization, Westernization, current issues in U.S.-Japan relationships, contemporary cultural developments, or a linguistic topic. May be repeated for credit when topics vary.

Kinesiology (KIN)

Department of Health and Kinesiology, College of Education and Human Development

NOTE: All prerequisites for Kinesiology (KIN) courses must be completed with a grade of "C–" or better.

1001 Individual Physical Activities
(0-3) 1 hour credit.
Practice in the techniques of individual physical activities. Sections focus on particular sports or fitness activities as indicated in the Schedule of Classes. May be repeated for credit, but not more than 6 semester credit hours of KIN 1001 alone or in combination with KIN 1101 will apply to a bachelor's degree.

1013 Freshman Topics in Kinesiology
(3-0) 3 hours credit.
This course is designed to help students acquire the tools and life skills necessary to succeed in college and the future. The curriculum is an overview of topics including: note and test taking, learning styles, concentration skills, stress management, communication, diversity, and how to choose a major and a career. The student will be oriented with the different aspects of Roadrunners for Life, UTSA's version of the NCAA CHAMPS/Life Skills Program. A maximum of 3 semester credit hours of freshman topics courses may apply to a bachelor's degree.

1101 Team Sports
(0-3) 1 hour credit.
Practice in the techniques of team sports. Sections focus on particular sports as indicated in the Schedule of Classes. May be repeated for credit, but not more than 6 semester credit hours of KIN 1101 alone or in combination with KIN 1001 will apply to a bachelor's degree.

2003 Computer Applications in Kinesiology and Health
(3-0) 3 hours credit. Prerequisite: KIN 2303 or HTH 3503.
Application of computer and multimedia technology in Kinesiology and Health disciplines. (Formerly KIN 3003. Credit cannot be earned for both KIN 2003 and KIN 3003.)

2123 Fitness and Wellness Concepts [TCCN: KINE 1338.]
(3-0) 3 hours credit.
This course is designed to provide students with developmentally appropriate knowledge and skills in health and fitness. The course will address health-related issues in personal, interpersonal, and community settings. An individual fitness requirement is required for passing the course. (Formerly IDS 2123. Credit cannot be earned for both KIN 2123 and IDS 2123.)

2303 Cultural and Scientific Foundations [TCCN: KINE 1301.]
(3-0) 3 hours credit.
Study of philosophy, ethics, sociology, scientific areas, and current concepts relevant to the discipline of kinesiology. Directed field experience is required.

2421 Outdoor Activities and Innovative Games
(1-2) 1 hour credit.
Practice in delivering instructions of selected outdoor activities (hiking, orienteering, biking) and innovative games for all age groups. Weekend class field trips required. Laboratory fee will be assessed. (Formerly KIN 2433. Credit cannot be earned for both KIN 2421 and KIN 2433.) (Formerly titled "Outdoor Activities and Lifetime Sports.")

2441 Management and Organization in Kinesiology and Sports
(1-0) 1 hour credit.
Introduction to concepts and skills that will prepare the student to become an effective leader of physical fitness, sport and health, and physical education programs. (Formerly KIN 2423. Credit cannot be earned for both KIN 2423 and KIN 2441.)

3001 Skill Analysis in Physical Activity: Individual Activities
(1-2) 1 hour credit. Prerequisite: KIN 3413.
Practice in delivering developmentally appropriate physical activity instruction in a variety of selected individual activities such as golf, bowling, archery, and track and field. (Formerly KIN 2001. Credit cannot be earned for both KIN 3001 and KIN 2001.)

3011 Skill Analysis in Physical Activity: Team Sports I
(1-2) 1 hour credit. Prerequisite: KIN 3413.
Practice in delivering developmentally appropriate physical activity instruction in a variety of selected team sports, such as basketball, soccer, and baseball/softball. (Formerly KIN 2101. Credit cannot be earned for both KIN 3011 and KIN 2101.)

3013 Theory of Coaching
(3-0) 3 hours credit.
This course will discuss the principles and philosophies of coaching sports. Domains will remain consistent with that of the National Standards for Sport Coaches and will focus on philosophy and ethics, safety and injury prevention, physical conditioning, growth and development, teaching and communication, sport skills and tactics, organization and administration, and evaluation.

3021 Skill Analysis in Physical Activity: Team Sports II
(1-2) 1 hour credit. Prerequisite: KIN 3413.
Practice in delivering developmentally appropriate physical activity instruction in a variety of selected team sports, such as football, volleyball, and team handball. (Formerly KIN 2101. Credit cannot be earned for both KIN 3021 and KIN 2101.)

3031 Skill Analysis in Physical Activity: Dual Sports
(1-2) 1 hour credit. Prerequisite: KIN 3413.
Practice in delivering developmentally appropriate physical activity instruction in a variety of selected dual sports, such as badminton, tennis and handball. (Formerly KIN 2201. Credit cannot be earned for both KIN 3031 and KIN 2201.)

3041 Skill Analysis in Physical Activity: Track and Field
(1-2) 1 hour credit.
Specialized activity instruction involving skills, drills, rules, regulations, and skill performance in a variety of selected track and field events. (Formerly KIN 2301. Credit cannot be earned for both KIN 3041 and KIN 2301.)

3051 Group Fitness Instruction
(1-2) 1 hour credit.
Practice in delivering a variety of appropriate aerobic and musculoskeletal fitness and wellness activities for children and adults. (Formerly KIN 2401. Credit cannot be earned for both KIN 3051 and KIN 2401.) (Formerly titled "Aerobic Fitness Instruction.")

3061 Foundational Movement
(1-2) 1 hour credit.
Provide instruction in facilitating the foundational movement skills which provide the basis for all movement capacities and their application in specialized activities geared to the early childhood through adolescent stages. (Formerly KIN 2411. Credit cannot be earned for both KIN 3061 and KIN 2411.) (Formerly titled "Rhythmical Activities and Dance.")

3071 Musculoskeletal Fitness Instruction
(1-2) 1 hour credit.
Instructional techniques applied to resistance training, plyometrics, flexibility, and musculoskeletal conditioning activities.

3103 Motor Development
(3-0) 3 hours credit. Prerequisite: KIN 2303 or HTH 3503.
A study of motor, physical, and neuromuscular development across the human life span. Effects of social, cognitive, growth and maturation, and aging factors on motor development will be addressed. Directed field experience may be required. (Formerly KIN 4103. Credit cannot be earned for both KIN 3103 and KIN 4103.)

3113 Scientific Principles of Physical Activity
(3-1) 3 hours credit. Prerequisite: KIN 3313.
A study of the physiological and biomechanical principles of physical activity and human movement. Emphasis is placed on acute responses and chronic adaptations of the musculoskeletal and cardiorespiratory systems to physical activity.

3123 Early Childhood Development Through Movement
(3-0) 3 hours credit.
A study of movement development and the effects on cognitive and social development of young children. Students will learn to program and deliver developmentally appropriate strategies and activities to introduce and refine fundamental movement skills and health-related components of fitness. Task analysis and sequential delivery of concepts and skills will also be discussed. Some field work experiences may be required.

3213 First Aid and Injury Management
(3-0) 3 hours credit. Prerequisite: KIN 2303 or KIN 3013.
Study and application of first aid and treatment of common exercise-related injuries in sport and exercise environments. Additional training includes risk-management strategies for providing safe exercise environments, and management of exercise testing facilities. Upon successful completion of this course, the student will be eligible for certification in first aid and CPR. (Credit cannot be earned for both KIN 3213 and HTH 2523.) (Formerly titled "Sport First Aid.")

3303 Athletic Injuries and Training Procedures
(3-0) 3 hours credit. Prerequisite: KIN 3313 or an equivalent.
Prevention and care of athletic injuries. A study of training and conditioning for the team and individual. Techniques and procedures for emergencies: diagnostic, preventive, and remedial measures. Organization of the training room facility. Directed field experience may be required.

3313 Anatomy and Physiology for Kinesiology
(3-1) 3 hours credit. Prerequisite: KIN 2303 or HTH 3503.
A detailed study of anatomy and physiology of the human cardiorespiratory, musculoskeletal and nervous systems. Emphasis will be placed on the anatomical factors that cause human movement and application to common exercise-related injuries. Anatomy laboratory hours may be required. (Formerly titled "Anatomic Kinesiology.")

3323 Biomechanics
(3-1) 3 hours credit. Prerequisite: KIN 3313, BIO 2083, or BIO 3123.
The study of the human body in sports motion and sport objects in motion. The application of mechanical principles, kinematics, and kinetics. Biomechanics laboratory hours are required.

3413 Tactics
(3-0) 3 hours credit. Prerequisite: KIN 2303.
Development, organization, and delivery of appropriate physical activities for children through the adolescent stage. Some fieldwork observation experiences may be required.

3433 Exercise Physiology
(3-1) 3 hours credit. Prerequisite: KIN 3313, BIO 2103, or BIO 3153.
A study of the adaptation and effects of the body to physiological stress. Emphasis will be placed on the physiology of training, metabolism and work capacity, and electrocardiography. Exercise physiology laboratory hours are required.

3443 Graded Exercise Testing and Fitness Assessment
(3-1) 3 hours credit. Prerequisite: KIN 3433.
A study and application of the principles and concepts of fitness measurement. Topics include graded exercise testing, electrocardiography, assessment of aerobic capacity, body composition, flexibility, muscular strength, muscular endurance, and pulmonary function. This course includes mandatory attendance and participation in laboratory activities. An individual fitness requirement is required for passing the course. (Formerly titled "Fitness Testing and Exercise Prescription.")

3453 Fitness Programming and Exercise Prescription
(3-1) 3 hours credit. Prerequisite: KIN 3433.
A study and application of principles and concepts related to designing exercise programs. The target population includes apparently healthy adults and individuals with special considerations, including cardiovascular disease, pulmonary disease, obesity, diabetes, pregnancy, and children.

4023 Exercise Psychology
(3-0) 3 hours credit. Prerequisite: KIN 2303.
An investigation of psychological processes and behaviors related to participation in exercise and physical activities. Psychological effects of exercise, motives for fitness, exercise adherence, and fitness counseling.

4043 Therapeutic Modalities
(3-1) 3 hours credit. Prerequisites: KIN 3303 and KIN 3313.
This course is designed to introduce students to a variety of therapeutic modalities currently used in clinical rehabilitation. Students will learn the theoretical basis and application procedures for a variety of modalities including therapeutic heat and cold, electrotherapy, therapeutic massage, ultrasound, and laser/light therapy.

4113 Evaluation
(3-0) 3 hours credit. Prerequisite: KIN 3103.
Application of test, measurement, and evaluation theory. Emphasis is on proper selection and administration of tests, appropriate evaluation of test results using basic statistical procedures, and assignment of grades. Field experience required.

4123 Psychosocial Aspects of Exercise and Sport
(3-0) 3 hours credit. Prerequisite: KIN 2303.
A study of human behavior in exercise and sport. Emphasis is placed on understanding the psychosocial principles underlying group processes, performance enhancement, and health and well-being.

4143 Advanced Athletic Training
(2-2) 3 hours credit. Prerequisites: KIN 3303 and KIN 3313.
This course deals in depth with issues related to athletic training, including assessment of injuries, and proper taping and wrapping techniques. A two-hour laboratory will accompany this class. Laboratory fee will be assessed.

4203 Teaching Secondary Physical Education
(3-1) 3 hours credit. Prerequisites: KIN 4343, KIN 4423, and admission to the Teacher Certification Program.
Examination of current trends, issues, and pedagogical approaches to the teaching and learning of physical education in the secondary school curriculum. Contemporary programming, behavior management strategies, and community outreach activities will be emphasized. Twenty-five hours of directed field experiences at the secondary school level are required. Restricted course; advisor code required for registration.

4233 Advanced Topics in Exercise Physiology
(2-2) 3 hours credit. Prerequisite: KIN 3433.
In-depth study of exercise physiology, emphasizing application of physiological principles of training for physical fitness and sport performance, graded exercise testing, and professional issues.

4243 Musculoskeletal Rehabilitation
(3-1) 3 hours credit. Prerequisites: KIN 3303 and KIN 3313.
This course examines various therapeutic exercises and programs used in the treatment and rehabilitation of exercise-related injuries.

4253 Exercise Nutrition
(3-0) 3 hours credit. Prerequisite: KIN 3433.
This course will address the basic concepts of nutrition from a scientific basis, applying these concepts to understanding of food nutritional labeling, dietary recommendations for health and fitness, as well as exercise or sport performance enhancement. (Formerly titled "Nutrition for Fitness.")

4303 Teaching Elementary Physical Education
(3-1) 3 hours credit. Prerequisites: KIN 4343, KIN 4423, and admission to the Teacher Certification Program.
Examination of current trends, issues, and pedagogical approaches to teaching and facilitating learning of physical education in the elementary school curriculum. Contemporary programming, problem solving, and community outreach activities will be emphasized. Twenty-five hours of directed field experiences at the elementary school level are required. Restricted course; advisor code required for registration.

4343 Movement Awareness
(3-0) 3 hours credit. Prerequisite: KIN 3413.
Study of concepts of movement awareness and the elements of movement that are the basis of all movement capacities. Application of these concepts to the learning of motor skills will be included.

4403 Motor Learning
(3-1) 3 hours credit. Prerequisite: KIN 3313 or an equivalent.
Functional applications of motor control and learning theory in skill instruction and sports performance. Motor learning laboratory hours are required.

4413 Coaching Athletics
(3-0) 3 hours credit.
Theory of coaching relevant to athletics. Emphasis on organization and content involved in coaching sports. The sport content may vary in different semesters between baseball, basketball, football, soccer, softball, and volleyball. Course may be repeated for credit.

4423 Developmental/Adapted Physical Activity
(3-1) 3 hours credit. Prerequisite: KIN 3103 or consent of instructor.
A developmental and functional approach to the study of disabilities in physical activity. Legislation, pathologies, and adaptation principles. Twenty hours of directed field experience.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4931 Clinical Applications
(1-2) 1 hour credit. Prerequisite: Consent of instructor.
This course provides instruction of therapeutic modalities and includes 300 hours of supervised field, laboratory and clinical experiences in athletic training. May be repeated for credit to a maximum of 6 semester credit hours.

4936 Internship in Kinesiology
6 hours credit. Prerequisites: Student is required to have a cumulative grade point average of 2.0 or greater and must be within 12 semester credit hours of graduation.
Supervised internship with appropriate agency in the field of kinesiology. No more than 6 semester credit hours of internship will apply to a bachelor's degree. (Credit cannot be earned for both KIN 4936 and HTH 4936.)

4943 Practicum in Kinesiology
3 hours credit. Prerequisite: Consent of instructor.
Supervised practicum with appropriate agency in the field of kinesiology. May be repeated for credit to a maximum of 6 semester credit hours.

4953 Special Studies
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4973 Wellness Counseling
(3-0) 3 hours credit. Prerequisites: KIN 3443 and KIN 4253.
Students will learn and apply counseling techniques to promote the adoption of health-promoting lifestyle behaviors in diverse populations. Basic counseling theories will be introduced.

4983 Applied Exercise Science
(3-1) 3 hours credit. Prerequisites: KIN 3323, KIN 3433, KIN 3443, KIN 3453, and KIN 4253.
Capstone course and seminar for students pursuing training and certification in exercise science, and preparation for graduate studies.

4993 Honors Thesis
3 hours credit. Prerequisites: Enrollment limited to candidates for honors in the Department of Health and Kinesiology during the last two semesters; consent of the Honors College.
Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval.

Latin (LAT)

Department of Philosophy and Classics,
College of Liberal and Fine Arts

1114 Introductory Latin I [TCCN: LATI 1411.]
(3-2) 4 hours credit.
Fundamentals of Latin grammar and readings in Latin.

1124 Introductory Latin II [TCCN: LATI 1412.]
(3-2) 4 hours credit. Prerequisite: LAT 1114.
Fundamentals of Latin grammar and readings in Latin.

1214 Self-Paced Introductory Latin
4 hours credit.
Fundamentals of Latin grammar and readings in Latin. Students take two semesters of this course to complete the first two semesters of Latin on a self-paced basis. May be repeated for credit, but not more than 8 semester credit hours may be used in any degree program. Students must demonstrate competency with a "C–" or better before repeating this course for credit. Students cannot receive credit for both LAT 1114 and a first semester of this course; students cannot receive credit for both LAT 1124 and a second semester of this course.

2113 Intermediate Latin I [TCCN: LATI 2311.]
(3-0) 3 hours credit. Prerequisite: LAT 1124 or the equivalent.
Continued practice in reading Latin. Selections from Cicero, Sallust, Catullus, and/or Virgil. Review of Latin grammar and syntax.

2123 Intermediate Latin II [TCCN: LATI 2312.]
(3-0) 3 hours credit. Prerequisite: LAT 2113 or the equivalent.
Reading and in-depth analysis of a particular Latin author such as Ovid, Virgil, Cicero, Lucretius, Petronius, or Plautus.

2213 Self-Paced Intermediate Latin
3 hours credit. Prerequisite: LAT 1124 or the equivalent.
Review of Latin grammar and syntax. Continued practice in reading Latin, including such authors as Catullus, Cicero, Lucretius, Ovid, Petronius, Plautus, Sallust, and Virgil. Students take two semesters of this course to complete the third and fourth semesters of Latin on a self-paced basis. May be repeated for credit, but not more than 8 semester credit hours may be used in any degree program. Students must demonstrate competency with a "C–" or better before repeating this course for credit. Students cannot receive credit for both LAT 2113 and a first semester of this course; students cannot receive credit for both LAT 2123 and a second semester of this course.

3113 Selected Latin Authors
(3-0) 3 hours credit. Prerequisite: LAT 2123 or the equivalent.
Close reading and critical analysis of a Latin text or texts, author, topic, or genre. May be repeated for credit when authors vary.

4013 Advanced Readings in Latin
(3-0) 3 hours credit. Prerequisite: LAT 2123 or the equivalent.
Concentrated readings and interpretation of a selected Latin author, genre, or series of texts. May be repeated for credit when topics vary.

Learning Communities (LC)

Office of Undergraduate Studies

2001 Sophomore Seminar
(1-0) 1 hour credit.
Small group discussion with faculty representing a variety of academic disciplines. This course provides students the opportunity to learn more about topics within their chosen discipline or explore interests outside of their current major. May be repeated for credit when topics vary, but no more than 3 semester credit hours will apply to a bachelor's degree.

Legal Studies (LGS)

Department of Political Science and Geography,
College of Liberal and Fine Arts

2013 Introduction to Legal Studies
(3-0) 3 hours credit.
An introduction to legal studies from an interdisciplinary perspective, exploring historical and contemporary aspects of the content, operations, and effects of law in societies.

3013 Legal Research and Writing
(3-0) 3 hours credit.
Provides students with the opportunity to explore the modes and sources of legal research, both traditional and electronic. CRJ 3613 Legal Research and Writing may be substituted for LGS 3013 in the LGS minor. (Same as CRJ 3613. Credit cannot be earned for both LGS 3013 and CRJ 3613.)

3113 Blacks, Chicanos, and the Law
(3-0) 3 hours credit.
This course examines the litigation, case law, legislation, and legal literature associated with African Americans and Mexican Americans in the United States.

3213 Law School Studies
(3-0) 3 hours credit.
Basic introduction to the primary subject areas covered in American law schools. Topics generally include Property, Civil Procedure, Contracts, Torts, Criminal Law, Family Law, Constitutional Law, and Professional Ethics. Topic coverage may extend to corporations, oil and gas, tax, or other more specialized topics. The course will better prepare students for the anticipated coursework and subject matter for the transition to law school.

3313 Science and the Law
(3-0) 3 hours credit.
This course will examine contemporary issues involving science and law. Students will have the opportunity to explore these issues through examination of (a) the governing legal structure (statutory, administrative and judicial), (b) historical, cultural, and political perspectives, (c) public policy, and (d) their societal and scientific impact. Course may include local issues.

3323 Constitutional Analysis I
(3-0) 3 hours credit.
An analysis of constitutional cases, issues, and modes of interpretation focusing on governmental powers. Provides students the opportunity to hone analytical, critical reading, and writing skills and to increase substantive knowledge of constitutional law.

3333 Constitutional Analysis II
(3-0) 3 hours credit.
An analysis of constitutional cases, issues, and modes of interpretation focusing on the Bill of Rights, individual freedoms, and equal protection. Provides students the opportunity to enhance analytical, critical-reading, and writing skills and to increase substantive knowledge of constitutional law.

3413 Regulatory Law and Enterprise
(3-0) 3 hours credit.
This course examines federal, state, and local administrative and regulatory engagement with Texan, American, and international enterprise. Students have the opportunity to explore law and policies affecting economic development, property, oil and gas, international trade, the Internet, and the environment.

4013 Issues in Law and Society
(3-0) 3 hours credit.
Provides students with the opportunity to conduct research on selected issues associated with the law and society. May be repeated for credit when topics vary, with permission of the Director of the Institute for Law and Public Affairs.

4123 Legal and Philosophical Reasoning
(3-0) 3 hours credit.
An intensive analysis of selected philosophical texts focusing on law and justice. Students are challenged to develop critical reading and thinking skills by studying the texts of philosophers such as Plato, Aristotle, Dworkin, Hart, and/or others who outline difficult arguments and unfamiliar ideas. Emphasis is placed on drawing reasoned conclusions, advocating positions, and expressing oneself in oral and written forms. (Same as POL 4123. Credit cannot be earned for both LGS 4123 and POL 4123.)

4133 Analytical Reasoning, Logic, Argumentation, and Law School Admission
(3-0) 3 hours credit.
This course provides students with the opportunity to develop and master techniques of focused reading, analytical reasoning, logic, argumentation, and the drawing of reasoned conclusions, placed in the context and modes of questioning appropriate to law school admission and education. Skills learned are relevant not only to law school, but also to developing and assessing arguments throughout college, career, and life.

4223 Torts
(3-0) 3 hours credit.
This course provides students with the opportunity to analyze American tort law. Topics may include negligence, intentional torts, affirmative defenses, and legal damages, as well as vicarious products and strict liability. Students should be prepared to read, brief, and discuss case law.

4233 Federal Courts
(3-0) 3 hours credit.
An examination of the operations, procedures, holdings, and opinions of federal courts, designed to provide students with the opportunity to gain a sophisticated understanding of the role of the federal judiciary in our constitutional system.

4913 Independent Study
3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Director of the Institute for Law and Public Affairs, the Department Chair, and the Dean of the College.
Independent reading, research, discussion, and writing under direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree. A maximum of 3 semester credit hours may be applied to the minor.

4933 Internship in Legal Studies
3 hours credit. Prerequisites: Consent of internship coordinator at the Institute for Law and Public Affairs, the faculty supervisor, and the Director of the Institute for Law and Public Affairs.
Supervised experience relevant to legal studies within selected community organizations. A maximum of 3 semester credit hours may be applied to the minor.

Linguistics (LNG)

Department of Modern Languages and Literatures, College of Liberal and Fine Arts

3813 Introduction to Linguistics
(3-0) 3 hours credit.
Basic principles of analysis and description of the structure of language, including sound system, word order, and meaning. Also, overview of selected subfields of linguistics, such as historical linguistics, sociolinguistics, language acquisition, and bilingualism. (Same as ANT 3903 and ENG 3343. Credit cannot be earned for more than one of these courses.)

3833 Sociolinguistics
(3-0) 3 hours credit.
The examination of the interrelationships among language, culture, and society. Topics may include language use in social context, language variation and change, maintenance and shift, and multilingual societies.

3843 Gender Issues in Language
(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in 3000-level linguistics course.
The examination and analysis of issues related to gender and language, such as the historical basis for grammatical gender, gender-based sociolinguistic differences, and recent research in gender-based expectations for language use.

4013 Topics in Linguistics
(3-0) 3 hours credit. Prerequisite: One course in LNG or consent of instructor.
An opportunity to explore linguistic topics in depth, including sociolinguistics, psycholinguistics, neurolinguistics, pragmatics, syntax, semantics, phonology, or phonetics. May be repeated for credit when topics vary. (Formerly LNG 3913. Credit cannot be earned for both LNG 4013 and LNG 3913.)

Management (MGT)

Department of Management, College of Business

3003 Business Communication and Professional Development
(3-0) 3 hours credit. Prerequisites: COM 1043 or COM 1053, WRC 1023, and classified as a prebusiness or declared major in the College of Business or department approval.
This course examines basic interpersonal communication processes within written and oral channels, with practical applications for the business environment. Issues regarding cross-cultural communication, crisis communication, and ethical considerations in business are discussed. The course emphasizes three areas: 1) planning, researching, organizing, writing, editing, and revising business-related documents; 2) planning, organizing, and delivering oral presentations in a business setting; and 3) preparing for professional success in the business world, including career planning, networking, job searching, résumé preparation, and job application and interviewing. Written assignments and oral presentations are required. (Formerly MGT 3043. Credit cannot be earned for both MGT 3003 and MGT 3043.)

3013 Introduction to Organization Theory, Behavior, and Management
(3-0) 3 hours credit.
A study of the complex role managers play in creating and maintaining organizations. Organization theory and behavior are explored within the context of changing technological, social, and political/legal environments and the internationalization of the economy. Some introduction to strategic analysis, planning, and decision making. Attention is given to the ethical dimensions of management and social responsibility.

3023 Understanding People and Organizations
(3-0) 3 hours credit. Prerequisite: MGT 3013 with a grade of "C–" or better.
A critical examination of behavioral theory as it relates to the management of individuals, dyads, and groups in organizations. Investigation of the organization as an open system of tasks, structures, tools, and people in states of continuous change.

3123 Organizational Communication
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MGT 3013 with a grade of "C–" or better, and a declared major in the College of Business or department approval.
Theory and research in organizational communication. The course will examine the barriers to effective organizational communication; group communication and decision making; and information flows through the formal and informal networks of organizations. The course will also stress the means of evaluating organizational communication effectiveness. (Same as COM 3893. Credit cannot be earned for both MGT 3123 and COM 3893.)

3253 Interpersonal Communication
(3-0) 3 hours credit. Prerequisites: MGT 3003 with a grade of "C–" or better and a declared major in the College of Business or department approval.
Theory and research of communication in personal and professional settings. The course stresses the social context of communication and emphasizes skills, knowledge, and motivation of verbal and nonverbal interactions. (Same as COM 3383. Credit cannot be earned for both MGT 3253 and COM 3383.)

3613 Managing Human Resources
(3-0) 3 hours credit. Prerequisites: MGT 3013 with a grade of "C–" or better and a declared major in the College of Business or department approval.
Analysis of how organizations attract, motivate, develop, and retain employees, and how they interact with organizations representing employees. Designed to provide students with an opportunity to understand the functional areas of human resource management and the integration of these functions into an effective and efficient human resource management system.

3803 Strategic Management of Nonprofit Organizations
(3-0) 3 hours credit. Prerequisite: MGT 3013 with a grade of "C–" or better and a declared major in the College of Business or department approval.
Analysis of administrative structure, decision making, and program delivery for nonprofit organizations. Includes management of agency operations in areas of leadership, strategic planning, staffing, personnel selection and policies, volunteers, boards, and community relations.

4023 Business Plan
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MGT 3013 with a grade of "C–" or better and a declared major in the College of Business or department approval.
This course requires students to work in a team where they propose a new business and develop a business plan for the business. The teams will learn to present and defend their plan and will compete in a business plan competition at the end of the semester. The course emphasizes development of the skills necessary to identify, value, and exploit entrepreneurial opportunities for the creation of wealth.

4073 International Management
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MGT 3013 with a grade of "C–" or better and a declared major in the College of Business or department approval.
A study of business and management practices in a global context. Topics include an introduction to international management, the role of the cultural, legal, and political environments in shaping management decision making, current developments in forming global business strategies, organizational designs, cross-cultural staffing, global communications and managerial control methodologies. Emphasis on thinking globally and competitively.

4083 Comparative International Management Practices
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MGT 3013, with a grade of "C–" or better and a declared major in the College of Business or department approval.
The study of management practices of other countries, including their cultural, social, political and legal, and industrial economic perspectives. Emphasis on different international regions at different times and their impact on American and global management practices.

4203 Business and Society
(3-0) 3 hours credit. Prerequisites: MGT 3003 with a grade of "C–" or better and a declared major in the College of Business or department approval.
A study of the impact of societal influences on the business decision-making process. Special attention given to business-government relationships and the role of the organization in the community.

4213 Designing Organizations
(3-0) 3 hours credit. Prerequisites: MGT 3003, MGT 3013, and MGT 3023 with a grade of "C–" or better and a declared major in the College of Business or department approval.
Study of the antecedents and consequences of organizational design and structure. Emphasis on the implications for managing behavior in a rapidly changing global environment.

4613 Compensating Employees
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MGT 3613 with a grade of "C–" or better and a declared major in the College of Business or department approval.
Analyzing, developing, implementing, administering, and performing ongoing evaluation of a total compensation and benefits system for all employee groups consistent with organizational goals. (Formerly MGT 3623. Credit cannot be earned for both MGT 4613 and MGT 3623.)

4623 Staffing Organizations
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MGT 3613 with a grade of "C–" or better and a declared major in the College of Business or department approval.
Planning, developing, implementing, administering, and performing ongoing evaluation of recruiting, hiring, orientation, and organizational exit to ensure that the workforce will meet the organization's goals and objectives.

4633 Labor Relations
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MGT 3613 with a grade of "C–" or better and a declared major in the College of Business or department approval.
The process of analyzing, developing, implementing, administering, and performing ongoing evaluation of the workplace relationship between employer and employee (including the collective bargaining process and union relations), in order to maintain effective relationships and working conditions that balance the employer's needs with the employees' rights in support of the organization's strategic objectives.

4643 Human Resources Law
(3-0) 3 hours credit. Prerequisites: BLW 3013 and MGT 3003 with a grade of "C–" or better and a declared major in the College of Business or department approval.
An analysis of historical and contemporary laws in the United States that affect the human resource management function. Integration of labor and employment law with the social and economic forces shaping the current labor-management environment.

4663 Training and Developing Employees
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MGT 3613 with a grade of "C–" or better and a declared major in the College of Business or department approval.
The processes of ensuring that the skills, knowledge, abilities, and performance of the workforce meet the current and future organizational and individual needs through developing, implementing, and evaluating activities and programs addressing employee training and development, change and performance management, and the unique needs of particular employee groups.

4803 Managing Human Resources for Competitive Advantage
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in MGT 3003, MGT 3613, and one of the following: MGT 4613, MGT 4623, or MGT 4663; and a declared major in the College of Business or department approval.
Analysis of how human resource management might aid in developing competitive advantage and what might be done to fulfill this potential. Emphasis is on the processes and activities used to formulate HR objectives, practices, and policies to meet the short-range and long-range organizational needs and opportunities, to guide and lead the change process, and to evaluate the contributions of human resources to organizational effectiveness. (Formerly titled "Strategic Human Resources Management.")

4813 Current Topics in Human Resource Management
(3-0) 3 hours credit. Prerequisites: MGT 3003 with a grade of "C–" or better and a declared major in the College of Business or department approval.
Critical analysis of current trends in human resource management theory, research, and practice. Emphasis on the analysis, synthesis, and evaluation of contemporary human resource management issues. May be repeated for credit when topics vary.

4893 Management Strategy
(3-0) 3 hours credit. Prerequisites: FIN 3014 and MGT 3003; College of Business declared major in semester of graduation. Students are also required to meet all University regulations related to good academic standing and maintain a minimum grade point average of 2.0 in UTSA College of Business courses. Permission given through the College of Business Undergraduate Advising Center before registration.
A study of the analytic tools and processes involved in the formulation and implementation of strategic choices in realistic organizational settings. Students are required to integrate their functional knowledge and understanding of the global environment with the concepts and principles of strategic management to determine effective ways to resolve complex problems concerning the relationship between the total organization and its environment. Creative analytical skills and effective communication in light of current management thinking are emphasized.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4923 Leading Organizations and Making Decisions
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MGT 3013 with a grade of "C–" or better and a declared major in the College of Business or department or instructor approval.
This is an advanced course focusing on traditional and contemporary perspectives on leadership. Because the leader is seen as a decision maker, individual and organizational issues surrounding effective decision making are also addressed in detail.

4933 Internship in Management
3 hours credit. Prerequisites: MGT 3003, 2.5 grade point average, 9 semester credit hours of management courses, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for additional requirements and required forms.
The opportunity for managerial work experience. Requires a semester-long experience in private business or a public agency and a written component. Opportunities and output requirements are developed in consultation with a faculty advisor and the Department Chair and require approval of both. Internship may be repeated once (for a total of 6 semester credit hours), provided the internships are with different organizations.

4943 Managing Effective Teams and Resolving Conflict
(3-0) 3 hours credit. Prerequisites: MGT 3003, MGT 3013, and MGT 3023 with a grade of "C–" or better and a declared major in the College of Business or department approval.
This is an advanced course focused on building the skills necessary to work effectively as part of a team. Conflict resolution techniques and effective negotiation techniques are examined in detail.

4951-3 Special Studies in Management
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisites: MGT 3003 with a grade of "C–" or better and a declared major in the College of Business or department approval.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Thesis
3 hours credit. Prerequisite: MGT 3003. Enrollment limited to students applying for Honors in Management (see page 49).
Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval.

Management of Technology (MOT)

Department of Entrepreneurship and Technology Management, College of Business

4023 Essentials of Technology Management
(3-0) 3 hours credit. Prerequisite: MGT 3003 or consent of instructor. MGT 3003 is waived for nonbusiness students declaring Technology Management as a minor.
This survey course provides an overview of the issues that impact technology management. All technology management subsystems are included: strategy, technology, resource, organizational, project, and people. The course is designed to help students develop the systems thinking necessary to successfully interact with the burgeoning technological world. The course will also provide the opportunity for students to develop the entrepreneurial skills important in managing the design, development, and commercialization of technological goods and services. (Formerly titled "Management of Technology.")

4143 Introduction to Project Management
(3-0) 3 hours credit. Prerequisite: MGT 3003 or consent of instructor. MGT 3003 is waived for nonbusiness students declaring Technology Management as a minor.
This introductory course presents concepts and techniques for the management of many types of projects including engineering, construction, product development, as well as science and technology projects. The course is designed to help students develop project planning skills including scope definition, scheduling, cost-estimating and risk assessment. The course will also provide the opportunity for students to develop skills in support of project leadership, team building and communication.

4203 Strategic Management of Technology and Innovation
(3-0) 3 hours credit. Prerequisite: MOT 4023 or consent of instructor.
This course examines the issues involved in the strategic management of technology in contemporary business organizations. The course will examine new product development, emerging technologies and product portfolios; and will explore the dynamics of innovation in the firm.

4313 Disruptive Innovations
(3-0) 3 hours credit. Prerequisite: MOT 4023 or consent of instructor.
This survey course focuses on technologies that may transform society and improve quality of life: the emphasis is on the nexus among biotechnology, information systems, materials, and renewable energy. The course will help students refine the systems thinking necessary to connect technology with users: it investigates the barriers that entrepreneurs face during commercialization. Cooperative learning is a defining characteristic of the course.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: MOT 4023 and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for the required forms.
Independent research in a management of technology topic under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4951-3 Special Studies in Management of Technology
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisites: MOT 4023 and consent of instructor.
An organized course offering specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Management Science (MS)

Department of Management Science and Statistics, College of Business

1023 Business Statistics with Computer Applications I
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in IS 1403 and MAT 1033, or equivalents.
This is the first course in a sequence of three courses designed to introduce basic statistical and quantitative techniques for business and economics. This course examines analytical skills and statistical concepts important in business-oriented environments. Various statistical techniques will be presented to assist in solving problems encountered by organizations. Topics include, but are not limited to, descriptive statistics, measures of central tendency and dispersion, elementary probability theory, expected value, random variables, discrete and continuous distributions, sampling distributions, point and interval estimation, and hypothesis testing. Electronic spreadsheets will be utilized for analyzing and interpreting data. (Credit cannot be earned for both MS 1023 and MS 1013.)

3043 Business Statistics with Computer Applications II
(3-0) 3 hours credit. Prerequisites: A grade of "C–" or better in MAT 1033 and MS 1023, or equivalents.
This course builds on the foundations learned in MS 1023. Statistical concepts include, but are not limited to, hypothesis testing concepts, goodness-of-fit tests, tests of independence, nonparametric tests, decision making under uncertainty, analysis of variance, correlation, linear and multiple regression, and time series. Electronic spreadsheets and statistical software will be utilized in analyzing and interpreting data and for hands-on assessment.

3053 Management Science and Operations Technology
(3-0) 3 credit hours. Prerequisites: A grade of "C–" or better in MAT 1033, MS 1023, and MS 3043, or equivalents.
This is an introductory course in management science that emphasizes model building as a foundation for rational decision making and problem solving across disciplines and functional areas. Topics include, but are not limited to, mathematical programming, network models, project management, multi-criteria decision making, inventory management, service operations and queuing models, Markov analysis, and simulation. Computer software is used to apply these techniques in the analysis of a wide variety of decision problems. (Credit cannot be earned for both MS 3053 and MS 3033.)

3063 Decision Support Systems
(3-0) 3 hours credit.
This course focuses on applications of decision-support models and computer software to problems in business, government, and other types of organizations with an emphasis on emerging technologies. It emphasizes fundamentals of decision support systems and hands-on experience using computer-based technologies to support organizational decision making. The primary focus is on four essential areas: decision analysis, simulation, project analysis, and mathematical programming. Excel, Microsoft Project, WINQSB, Expert Choice, and Extend are some of the software packages utilized.

3313 Business Applications of Statistics
(3-0) 3 hours credit.
This course emphasizes application of statistics in problem-solving situations involving management, marketing, human resources, finance, and operations management. Useful techniques include analysis of variance, simple and multiple regression, logistic regression, multiple discriminant analysis, factor analysis, cluster analysis, multidimensional scaling, and conjoint analysis. Students use computer software such as SPSS or SAS in their analyses.

3403 Logistics Management
(3-0) 3 hours credit.
This course focuses on analyzing managerial decisions related to the movement and storage of supplies, work-in-process, and finished goods, and examining the trade-offs encountered by managers: costs and service levels, level and modes of transportation used, warehousing and control of inventory levels, demand management and forecasting master production scheduling, just-in-time (JIT), materials requirements planning (MRP), MRP II, DRP, materials handling within warehouses, distribution of finished goods to customers, industrial packaging, and importance of logistics to the overall productivity of a firm are investigated. When available, an integrated software approach such as supply chain management (SCM) and enterprise resource planning (ERP) by SAP, Oracle or I2 will be adopted.

3413 Purchasing and Inventory Management
(3-0) 3 hours credit.
This course explores the industrial purchasing cycle for materials acquisition and management. Determination of requirements, supplier qualifications, appraisals, source selection, buying practices, value analysis, policies, ethics, and international purchasing are included in this course. Inventory control concepts, techniques, and strategies for effective integration with basic finance, marketing, and manufacturing objectives are topics covered in this course. Models for dependent and independent demand inventory systems, material requirements planning systems, distribution requirements, planning techniques, and the classical reorder point inventory model are also included.

4313 Six Sigma and Lean Operations
(3-0) 3 hours credit.
This course focuses on Six Sigma as a quality improvement methodology structured to reduce failure rates to a negligible level and on lean operations methodology structured to reduce waste. Materials include an overview of lean management philosophy and fundamentals of DMAIC problem-solving methodology. Topics include project criteria and prioritization methods, process capability measures, scorecard development, Six Sigma tools, DOE, and sampling and analyzing process data.

4323 Simulation Applications in Business
(3-0) 3 hours credit.
A study of the techniques for modeling and analysis of business processes using computer simulation and animation is the focus of this course. Selected example applications from supply chain management, financial, marketing, and operations functions are included. The computer simulations provide support for the management decision process.

4333 Project Management
(3-0) 3 hours credit.
This course provides a practical examination of how projects are managed from start to finish. The emphasis is on planning and control to avoid common pitfalls and manage risk. Planning includes defining objectives, identifying activities, establishing precedence relationships, making time estimates, determining project completion times, and determining resource requirements. CPM/PERT networks are established, and computer software (Microsoft Project, WINQSB, and Excel) is used to monitor and control the project.

4343 Production/Operations Management
(3-0) 3 hours credit.
This course focuses on the production and operations management function in business. It includes a review of the methods required for design, operation, and improvements of the systems that create products or services. Traditional topics in manufacturing and service operations are investigated including an introduction to supply chain management concepts.

4353 Service Operations Management
(3-0) 3 hours credit.
This course is designed to provide an in-depth examination of operations management practices in service-oriented environments. The subjects introduced include topics from operations management, logistics, marketing, economics, and management demonstrated in a broad spectrum of service organizations. The course looks at strategic concepts in modern service management and presents analytical tools for business decision making. Topics include, but are not limited to, service quality, process design, facility location analysis and site selection, waiting line models, inventory management in services, demand forecasting, workforce scheduling, learning curve models, overbooking, service supply chain, and integrated service operations management.

4363 Quality Management and Control
(3-0) 3 hours credit.
This course investigates the fundamental nature of quality and its implications for business. Topics include statistical methods for quality improvement in manufacturing and service operations. Emphasis is given to both the technical and managerial issues in understanding and implementing quality as a component for success in today's global business environment.

4383 Applied Forecasting in Operations
(3-0) 3 hours credit.
This course introduces modern and practical methods for operations planning and decision making. Short-term forecasting of demand, personnel requirements, costs and revenues, raw material needs, and desired inventory levels are some of the topics included. Other topics covered include technological and environmental forecasting, decomposition methods, and monitoring (automatic procedures such as tracking signals).

4543 Supply Chain Management
(3-0) 3 hours credit.
Principles, techniques and practices of corporate supply chain management are covered in this course. The focus is on the strategic coordination and information management that integrates supplier selection, purchasing, transportation, inventory and warehousing, channel planning and configuration, production and distribution from procurement of raw material to customer satisfaction. Business decision models and techniques for facility location, production, inventory, transportation and other operational issues are presented. Currently available software will be surveyed and cases of successful implementations will be analyzed.

4911-3 Independent Study in Management Science
1 to 3 hours credit. Prerequisites for business majors: Permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms and additional requirements.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. This course may be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933 Internship in Management Science
3 hours credit. Prerequisites for business majors: Permission in writing from the instructor, the Department Chair, and the Dean of the College of Business; and 2.5 grade point average. See the College of Business Undergraduate Advising Center for required forms and additional requirements.
Supervised full- or part-time work experience in management science. Offers opportunities for applying management science in private businesses or public agencies. May be repeated for credit, but not more than 6 semester credit hours will apply to a bachelor's degree.

4951-3 Special Studies in Management Science
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special studies may be repeated for credit when the topics vary.

4993 Honors Thesis
3 hours credit. Enrollment limited to students applying for Honors in Management Science and Statistics (see page 55). Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval.

Marketing (MKT)

Department of Marketing, College of Business

3013 Principles of Marketing
(3-0) 3 hours credit.
Introduction to basic principles of marketing. An examination of market analysis methods and their use to develop the organization's product mix and the integration of the communication, distribution, and pricing strategies to achieve goals.

3043 Advertising
(3-0) 3 hours credit. Prerequisite: MKT 3013 with a grade of "C–" or better.
The course stresses planning advertising strategy, developing messages, selecting media, and testing effectiveness. Also explores the theory, history, social and economic aspects, and problems of ethics and truth in advertising.

3063 Personal Selling
(3-0) 3 hours credit. Prerequisite: MKT 3013 with a grade of "C–" or better.
Focuses on professional salesmanship. Fundamentals of persuasive interpersonal communication and buyer motivation are stressed as the foundation to effective selling. (Formerly MKT 3163. Credit cannot be earned for both MKT 3063 and MKT 3163.)

3083 Marketing Research
(3-0) 3 hours credit. Prerequisites: MKT 3013 with a grade of "C–" or better, MS 1023 or the equivalent, and MS 3043 or the equivalent.
Explores the techniques of marketing research as the means to discover opportunities for investing the firm's resources in its product offerings, including research design, sampling, data collection and analysis, and presentation of findings for marketing action.

3113 Retailing
(3-0) 3 hours credit. Prerequisite: MKT 3013 with a grade of "C–" or better.
Examination of retailing as a specialized economic and social institution within the distribution process. Emphasis is on strategy and resource management for the retail firm; critical variables, forces, and processes are examined from a managerial perspective.

4043 Advertising Management
(3-0) 3 hours credit. Prerequisites: MGT 3003, MKT 3013 with a grade of "C–" or better, and MKT 3043.
Emphasizes the management of advertising and the key decision variables supporting the advertising strategy process. Examines the nature and scope of advertising campaigns, including case histories.

4063 Multicultural Marketing
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MKT 3013 with a grade of "C–" or better.
Highlights marketing opportunities created by consumers whose marketplace choices and behaviors are shaped by their social identities as members of distinctive ethnic, age cohort, sexual orientation, and disability subcultures. Profiles the demographic, geographic, values, lifestyles, media usage, and unique market preferences of each group. Emphasizes best practices in multicultural marketing strategy, and delineates similarities to and differences from international marketing management.

4073 International Marketing
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MKT 3013 with a grade of "C–" or better.
An overview of concepts, processes, and strategies necessary to offer goods and services successfully in the global marketplace. Focus is on analyzing and assessing political, economic, technological, cultural, and competitive climates in global markets; defining the nature of important needs within the consumer and/or business segments of the country; the selection of countries or regions for market expansion strategies; the selection of target customers; and the design of strategies to facilitate market entry and subsequent expansion.

4083 Topics in Marketing
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MKT 3013 with a grade of "C–" or better.
A course focused on marketing topics such as product management, pricing strategies, promotion, distribution management, or services marketing. May be repeated for credit when topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree.

4093 Consumer Behavior
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MKT 3013 with a grade of "C–" or better.
Focus on the customer as a primary consideration in strategic marketing decisions. Analysis of personal and environmental variables in the customer's world as the basis for market segmentation and subsequent formulation of the marketing mix.

4133 Import/Export Marketing
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MKT 3013 with a grade of "C–" or better.
Introduction to basic principles of international importing and exporting strategy from a marketing perspective.

4143 Sports Marketing
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MKT 3013 with a grade of "C–" or better.
An overview of the marketing concepts, practices, and processes involved in offering and promoting goods and services in the sports industry. Emphasis on developing an understanding of unique aspects of the sports industry and on adapting general marketing principles to the domain of sports marketing. (Formerly MKT 4953 Special Studies in Marketing: Sports Marketing. Credit cannot be earned for both MKT 4143 and MKT 4953 on the same topic.)

4233 Integrated Marketing Communications
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MKT 3013 with a grade of "C–" or better.
Focuses on managing and integrating communication aspects of marketing, including advertising, sales promotion, personal selling, and public relations.

4353 Service Operations Management
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MKT 3013 with a grade of "C–" or better.
In-depth examination of operations management practices in service-oriented environments. Subjects embrace materials from operations management, logistics, marketing, economics, and management in a broad spectrum of service organizations. The course looks at strategic concepts in modern service management and presents analytical tools for business decision making. Topics include, but are not limited to, service quality, process design, facility location analysis and site selection, waiting line models, inventory management in services, demand forecasting, workforce scheduling, learning curve models, overbooking, service supply chain, and integrated service operations management. (Same as MS 4353. Credit cannot be earned for both MGT 4353 and MS 4353. Marketing majors cannot take MS 4353 as an upper-division Marketing elective.)

4763 Real Estate Marketing
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MKT 3013 with a grade of "C–" or better.
Focuses on the processes involved in professionally marketing and selling real estate. Emphasis is on integrating the four elements of a marketing mix – promotion, place, product, and price – and showing how they are used within the real estate industry to create marketing strategies. (Same as RFD 4763. Credit cannot be earned for both MKT 4763 and RFD 4763. Marketing majors cannot take RFD 4763 as an upper-division Marketing elective.)

4893 Marketing Capstone
(3-0) 3 hours credit. Prerequisites: MGT 3003, MKT 3013 with a grade of "C–" or better, senior standing, and 12 additional semester credit hours in marketing. Students are also required to meet all University regulations related to good academic standing and maintain a minimum grade point average of 2.0 in UTSA College of Business courses. Approval is obtained in the College of Business Undergraduate Advising Center.
The course focuses on integrating marketing functions, processes, and concepts into coherent and effective marketing decision making. (Formerly titled "Marketing Strategy.")

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: MGT 3003, MKT 3013 with a grade of "C–" or better, 9 additional semester credit hours in marketing, senior standing, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933 Internship in Marketing
3 hours credit. Prerequisites: MGT 3003, MKT 3013 with a grade of "C–" or better, 2.5 grade point average, 9 additional semester credit hours in marketing, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms and additional requirements.
The opportunity to gain knowledge through the experiential activities of organizational life. Joint cooperation with business, government, and health science institutions in structuring and monitoring work experience aimed at supplementing the learning process. Opportunities are developed in consultation with the faculty advisor and Department Chair and require approval of both. Internship may be repeated once (for a total of 6 semester credit hours) provided the internships are with different organizations, but only 3 hours may count toward the 21 hours of marketing required for the major.

4951-3 Special Studies in Marketing
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisites: MGT 3003 and MKT 3013 with a grade of "C–" or better.
An organized course offering the opportunity for specialized study not normally available as part of the regular course offerings. Could include topics such as marketing channels of distribution, sales management, industrial marketing, current developments in marketing theory, and analysis of ethical, social, and public policy aspects of marketing. May be repeated for credit when topics vary, but not more than 6 semester credit hours will apply to a bachelor's degree.

4993 Honors Thesis
3 hours credit. Prerequisite: MGT 3003. Enrollment limited to students applying for Honors in Marketing (see page 63). Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval.

Mathematics (MAT)

Department of Mathematics, College of Sciences

NOTE: All prerequisites for Mathematics (MAT) courses must be completed with a grade of "C–" or better.

0203 Basic Mathematics
(3-0) 3 hours credit.
A course intended for students with minimal mathematical skills who need a comprehensive review before they can successfully complete an algebra course. Topics include the Fundamental Mathematics and Geometry objectives of the Texas Higher Education Assessment (THEA), with an introduction to algebra. Intensive review and maintenance of computational skills with integers, fractions, decimals, percentages, ratios, and proportions; reading and interpreting information presented in graphs, tables, and charts; solving word problems, elementary algebraic equations, problems with two- and three-dimensional geometric figures; and inductive and deductive reasoning skills. Course does not count toward any degree at UTSA. This course may be repeated. (Formerly MTC 0103.)

0213 Intermediate Algebra
(3-0) 3 hours credit.
Introductory algebra course that includes the Texas Higher Education Assessment (THEA) Algebra and Problem Solving objectives. Operations with algebraic expressions; solving one- and two-variable equations; solving word problems involving one and two variables; graphing number relationships; and solving problems involving quadratic equations. Course does not count toward any degree at UTSA. This course may be repeated. (Formerly MTC 0113.)

1023 College Algebra with Applications [TCCN: MATH 1314.]
(3-0) 3 hours credit. Prerequisite: Satisfactory performance on a placement examination.
Topics include algebraic expressions; equations; inequalities over the real numbers; relations, functions and graphs; polynomial and rational functions; systems of linear equations and inequalities; complex numbers; and matrices and determinants. A wide range of applications will be included in this course. Students majoring in areas that require MAT 1214 Calculus I are encouraged to take MAT 1073 instead of MAT 1023. (Formerly MTC 1023. Credit can be earned for only one of the following: MAT 1023, MTC 1023, MAT 1063, MTC 1073, or MAT 1073.) This course is designed for majors outside sciences and engineering and will not serve as a prerequisite for MAT 1093.

1033 Algebra with Calculus for Business [TCCN: MATH 1325.]
(3-0) 3 hours credit. Prerequisite: Satisfactory performance on a placement examination.
An introduction to business calculus with an emphasis on the algebra of functions. Concentration is on the algebraic manipulations of functions and includes volume and profit functions, both linear and quadratic; root finding and graphical analysis; matrices; and differentiation and integration. (Formerly MTC 1033. Credit cannot be earned for both MAT 1033 and MTC 1033.)

1043 Introduction to Mathematics [TCCN: MATH 1332.]
(3-0) 3 hours credit. Prerequisite: Satisfactory performance on a placement examination.
This course is designed primarily for the liberal arts major to satisfy the Core Curriculum mathematics requirement. Topics may include logic; proofs; deductive and inductive reasoning; number theory; fundamentals of statistics; basic statistical graphs; causal connections; financial management; functions; linear graphs and modeling; exponential growth and decay; logarithms; fundamentals of probability; fundamentals of geometry; and basic ideas from trigonometry, calculus, and discrete mathematics. (Formerly MTC 1043. Credit cannot be earned for both MAT 1043 and MTC 1043.)

1073 Algebra for Scientists and Engineers [TCCN: MATH 1314.]
(3-0) 3 hours credit. Prerequisite: Satisfactory performance on a placement examination.
This course is designed to prepare the student for MAT 1093 Precalculus and MAT 1214 Calculus I. Topics may include algebraic expressions; equations; inequalities over the real numbers; relations; functions; polynomial and rational functions; logarithmic and exponential functions; systems of linear equations and inequalities; matrices and determinants; complex numbers; sequences; series binomial expansion; mathematical induction; permutations, and combinations. (Formerly MTC 1073. Credit can be earned for only one of the following: MAT 1073, MTC 1073, MAT 1063, MTC 1023, or MAT 1023.)

1093 Precalculus [TCCN: MATH 2312.]
(3-0) 3 hours credit. Prerequisite: MAT 1073 or the equivalent course or satisfactory performance on a placement examination.
Exponential functions, logarithmic functions, trigonometric functions, complex numbers, DeMoivre's theorem, and polar coordinates.

1153 Essential Elements in Mathematics I [TCCN: MATH 1350.]
(3-0) 3 hours credit. Prerequisite: MAT 1023 or MAT 1073.
Numeration systems; properties of the systems of whole numbers, integers, rational numbers, and real numbers; problem solving; logic. May not be applied toward a major in mathematics. (Credit cannot be earned for both MAT 1153 and MAT 1143.)

1163 Essential Elements in Mathematics II [TCCN: MATH 1351.]
(3-0) 3 hours credit. Prerequisite: MAT 1153.
Algebra, statistics and probability; geometric shapes; measurement; coordinate and transformational geometry. May not be applied toward a major in mathematics.

1193 Calculus for the Biosciences [TCCN: MATH 2313.]
(3-0) 3 hours credit. Prerequisite: MAT 1093 or an equivalent course or satisfactory performance on a placement examination.
An introduction to calculus is presented using discrete-time dynamical systems and differential equations to model fundamental processes important in biological and biomedical applications. Specific topics to be covered are limits, continuity, differentiation, antiderivatives, definite and indefinite integrals, the fundamental theorem of calculus, differential equations, and the phase-plane. (Formerly MAT 1194. Credit can be earned for only one of the following: MAT 1193, MAT 1194, or MAT 1214.)

1203 Calculus Concepts and Applications
(3-0) 3 hours credit. Prerequisite: MAT 1093.
This course is primarily for students pursuing a degree in Interdisciplinary Studies and/or seeking grades 4–8 teacher certification. The course will include the following calculus concepts: functions, limits, derivatives, and integrals. Applications and the use of technology are incorporated throughout the course. This course may not be applied toward a major in mathematics and will not meet the prerequisite for MAT 1224 Calculus II.

1214 Calculus I [TCCN: MATH 2413.]
(4-0) 4 hours credit. Prerequisite: MAT 1093 or an equivalent course or satisfactory performance on a placement examination.
An introduction to the concepts of limit, continuity and derivative, mean value theorem, and applications of derivatives such as velocity, acceleration, maximization, and curve sketching; introduction to the Riemann integral and the fundamental theorem of calculus. (Credit can be earned for only one of the following: MAT 1214, MAT 1193, or MAT 1194.)

1224 Calculus II [TCCN: MATH 2414.]
(4-0) 4 hours credit. Prerequisite: MAT 1193 or MAT 1214.
Methods of integration, applications of the integral, sequences, series, and Taylor expansions. (Formerly MAT 1223. Credit cannot be earned for both MAT 1224 and MAT 1223.)

2214 Calculus III [TCCN: MATH 2415.]
(4-0) 4 hours credit. Prerequisite: MAT 1224.
Vectors, functions of several variables, partial derivatives, line, surface and volume integrals, Green's, Stokes' and the Divergence theorems. (Formerly MAT 2213. Credit cannot be earned for both MAT 2214 and MAT 2213.)

2233 Linear Algebra [TCCN: MATH 2318.]
(3-0) 3 hours credit. Prerequisite: MAT 1224 or EGR 2323.
Vector spaces and matrix algebra, matrices and determinants, characteristic values of matrices, and reduction to canonical forms. Emphasis on applications.

3013 Foundations of Mathematics
(3-0) 3 hours credit. Prerequisite: MAT 1214.
Development of theoretical tools for rigorous mathematics. Topics may include mathematical logic, propositional and predicate calculus, set theory, functions and relations, cardinal and ordinal numbers, Boolean algebras, and construction of the natural numbers, integers, and rational numbers. Emphasis on theorem proving. (Formerly MAT 2243. Credit cannot be earned for MAT 3013 and MAT 2243.)

3103 Data Analysis and Interpretation
(3-0) 3 hours credit. Prerequisite: MAT 1093 or consent of instructor.
Measurement, sampling, summarizing and displaying data, types of data, inferential methods, nonparametric methods, qualitative research designs and methods, interpreting research results, and research design. Applications to research techniques in school-based settings will be emphasized. May not be applied toward the Mathematics Concentration of the B.S. degree in Mathematics.

3123 Fundamentals of Geometry
(3-0) 3 hours credit. Prerequisite: MAT 1093 or consent of instructor.
A survey of geometric concepts, including axiomatic development of advanced Euclidean geometry, coordinate geometry, non-Euclidean geometry, three-dimensional geometry, and topology. May not be applied toward the Mathematics Concentration of the B.S. degree in Mathematics.

3213 Foundations of Analysis
(3-0) 3 hours credit. Prerequisites: MAT 1224 and MAT 3013.
Axiomatic definition of real numbers, including order properties and completeness; infinite sequences and their convergence; basic notions related to series and their convergence; functions and function limits. Introduction to topology of the real line. Emphasis on theorem proving.

3223 Complex Variables
(3-0) 3 hours credit. Prerequisites: MAT 2214 and MAT 3013.
An introduction to complex variables, including elementary functions, line integrals, power series, residues and poles, and conformal mappings.

3233 Modern Algebra
(3-0) 3 hours credit. Prerequisites: MAT 1214 and MAT 3013 or consent of instructor.
Topics will include the development of groups, integral domains, fields, and number systems, including the complex numbers. Divisibility, congruences, primes, perfect numbers, and some other problems of number theory will be considered.

3273 Applied Mathematics for Sciences and Engineering
(3-0) 3 hours credit. Prerequisite: MAT 2214 or MAT 3613 or consent of instructor.
Mathematical applications in biology, physics, engineering or other scientific disciplines. Topics may employ techniques of complex analysis, harmonic analysis, Fourier series, Fourier transforms, and partial differential equations.

3613 Differential Equations I
(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in MAT 2233.
Basic notions of differential equations, solution of first-order equations and linear equations with constant coefficients, nth-order initial value problems, and power series solutions of differential equations.

3623 Differential Equations II
(3-0) 3 hours credit. Prerequisite: MAT 3613.
Continuation of MAT 3613. Stability, partial differential equations, and boundary value problems.

3633 Numerical Analysis
(3-0) 3 hours credit. Prerequisites: MAT 2233, MAT 3213, and one of the following: CS 1063, CS 1073, CS 1713, or CS 2073.
Solution of linear and nonlinear equations, curve-fitting, and eigenvalue problems.

3653 Stochastic Calculus
(3-0) 3 hours credit. Prerequisite: STA 3513.
Probability, random walk, Brownian motion, stationary and evolutionary processes and stochastic differential equations.

4013 Graphing Calculator Topics
(3-0) 3 hours credit. Prerequisite: MAT 1214 or consent of instructor.
Mathematical topics from algebra, trigonometry, calculus, modeling, and probability and statistics will be investigated using the graphing calculator. Assessment and evaluation techniques using technology will also be included. May not be applied toward the Mathematics Concentration of the B.S. degree in Mathematics.

4113 Computer Mathematical Topics
(3-0) 3 hours credit. Prerequisite: MAT 1214.
Mathematical topics from algebra, Euclidean and non-Euclidean geometry, number theory, and probability and statistics will be investigated using Geometer's Sketchpad and a variety of Web-based mathematics resources. Course will also include the application of software to the solution of a variety of geometric and algebraic problems. May not be applied toward the Mathematics Concentration of the B.S. degree in Mathematics.

4123 History of Mathematics
(3-0) 3 hours credit. Prerequisites: MAT 3233 or MAT 4233, and either MAT 3123 or MAT 4263.
Selected subjects in mathematics developed through historical perspectives and biographies. May not be applied toward the Mathematics Concentration of the B.S. degree in Mathematics.

4213 Real Analysis I
(3-0) 3 hours credit. Prerequisite: MAT 3213.
Continuous functions, uniform continuity; theory of differentiation; applications of the derivative to properties of functions; antiderivatives; Riemann integral; connection between differentiation and integration.

4223 Real Analysis II
(3-0) 3 hours credit. Prerequisite: MAT 4213.
Lebesgue integral on the real line; n-dimensional spaces; vectors; calculus of functions of several variables; multidimensional integration.

4233 Modern Abstract Algebra
(3-0) 3 hours credit. Prerequisites: MAT 2233 and MAT 3013.
An in-depth study of groups and rings.

4253 Number Theory
(3-0) 3 hours credit. Prerequisite: MAT 3233 or MAT 4233.
The theory of primes, congruences, and related subjects.

4263 Geometry
(3-0) 3 hours credit. Prerequisite: MAT 3013.
A study of non-Euclidean geometries, including spherical geometry, hyperbolic geometry and others.

4273 Topology
(3-0) 3 hours credit. Prerequisite: MAT 3213.
Set theory, including cardinal and ordinal numbers. Topological properties of the real-line and metric spaces.

4303 Capstone Course for Mathematics
(3-0) 3 hours credit. Prerequisites: Consent of instructor or one each from MAT 3123 or MAT 4263, MAT 3233 or MAT 4233, and MAT 4013 or MAT 4113.
This course is for any interested mathematics major, particularly for those students who intend to pursue secondary certification in Mathematics. The goals of the course are to enable students to build connections among the mathematical areas they have studied and between undergraduate mathematics and high school mathematics, to develop their understanding of mathematics as an integrated discipline, and to strengthen their oral and written communication skills in mathematics. May not be applied toward the Mathematics Concentration of the B.S. degree in Mathematics.

4313 Applied Combinatorics
(3-0) 3 hours credit. Prerequisite: MAT 1224.
Permutations, combinations, arrangements, selections, distributions, generating functions, inclusion-exclusion principle.

4323 Applied Graph Theory
(3-0) 3 hours credit. Prerequisite: MAT 1224.
Isomorphism, planarity, computer representation of graphs, covering circuits and graph colorings, Euler and Hamiltonian graphs, trees and searching network algorithms (shortest paths, connectivity, traveling salesman, network flow, matching, sorting, etc.).

4353 Mathematical Foundations of Cryptography
(3-0) 3 hours credit. Prerequisite: MAT 3233 or MAT 4233 or consent of instructor.
Congruences and residue class rings, Fermat's Little Theorem, the Euler phi-function, the Chinese Remainder Theorem; complexity; symmetric-key cryptosystems; cyclic groups, primitive roots, discrete logarithms, one-way functions; public-key cryptosystems (Diffie-Hellman key exchange, RSA, Rabin, El Gamal); digital signatures; and other groups (finite fields, elliptic curves).

4803 Statistical Quality Control
(3-0) 3 hours credit. Prerequisite: STA 1993 or STA 3513.
Statistical methods are introduced in terms of problems that arise in manufacturing and their applications to the control of manufacturing processes. Topics include control charts and acceptance sampling plans. (Same as STA 4803. Credit cannot be earned for both MAT 4803 and STA 4803.)

4913 Independent Study
3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4953 Special Studies in Mathematics
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. May be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Research
3 hours credit. Prerequisites: Enrollment limited to candidates for College Honors during their last two semesters; approval by the College Honors Committee.
Supervised research and preparation of an honors thesis. May be repeated once with approval.

Mechanical Engineering (ME)

Department of Mechanical Engineering,
College of Engineering

1302 Mechanical Engineering Practice
(2-0) 2 hours credit.
Engineering ethics, principles and fundamentals of engineering design, decision-making processes in cases of mechanical engineering design. (Formerly ME 1301. Credit cannot be earned for both ME 1302 and ME 1301.)

1402 Mechanical Engineering Practice and Graphics
(1-3) 2 hours credit. Prerequisite: ME 1302.
Introduction to engineering graphics: geometric constructions, multi-view drawing, dimensioning, sections, pictorials and auxiliary views. Computer-aided design, generation of mechanical drawings, and design projects. (Formerly ME 1403. Credit cannot be earned for both ME 1402 and ME 1403.) (Formerly titled "Engineering Graphics.")

2173 Numerical Methods
(2-3) 3 hours credit. Prerequisite: MAT 1224.
Introduction to the fundamentals of syntax and debugging techniques for interpreted and structured programming languages, including MATLAB® and C, with an emphasis on engineering applications. Cross-platform interchange of data and use of visualization tools for effective communication of computational results. Error and computer arithmetic, root finding, interpolation and extrapolation, curve-fitting, matrix manipulation, numerical integration, solution methods for systems of linear equations and differential equations. (Formerly ME 3173. Credit cannot be earned for both ME 3173 and ME 2173.)

3113 Measurements and Instrumentation
(3-1) 3 hours credit. Prerequisites: EE 2213, EGR 2513, PHY 1911, and PHY 1931.
Fundamentals of measurement systems, descriptive statistics, probability, error, error propagation, confidence intervals, hypothesis testing, correlation, linear regression, data acquisition.

3244 Materials Engineering and Laboratory
(3-3) 4 hours credit. Prerequisites: CHE 1103 and EGR 2103.
Fundamentals in structures, properties, fabrication, and mechanical behavior of engineering materials. Investigation of the properties of engineering materials, with emphasis on metals, sample preparation, metallography, and foundry processes. (Formerly ME 3241 and ME 3243. Credit cannot be earned for ME 3244 and ME 3241/ME 3243. Prior completion of ME 3241 and ME 3243 can be substituted for this course.)

3263 Manufacturing Engineering
(3-0) 3 hours credit. Prerequisite: ME 3244 (or ME 3241 and ME 3243 in previous catalogs).
An integrated coverage of mechanical properties of materials, tolerances, measurement and quality assurance, manufacturing processes, and manufacturing systems, fundamental definitions, design for manufacturing, and mathematical models, hands-on applications related to measurement and manufacturing processes. (Formerly titled "Materials Processing.")

3293 Thermodynamics I
(3-0) 3 hours credit. Prerequisites: EGR 2103 and MAT 1224.
Heat, work, equations of state, thermodynamics systems, control volume, first and second laws of thermodynamics, applications of the laws of thermodynamics, reversible and irreversible processes, and introduction to basic thermodynamic cycles.

3323 Mechanical Vibration
(3-0) 3 hours credit. Prerequisites: EGR 2323 and EGR 2513.
Free and forced vibrations, single and multiple degree of freedom systems, damping, matrix methods, time-domain and frequency-domain. Applications in the transmission and control of vibration.

3543 Dynamic Systems and Control
(3-0) 3 hours credit. Prerequisites: EGR 2513 and EGR 3323.
Introduction to modeling and control of dynamic physical systems, analysis and design of control systems for mechanical, electrical, manufacturing, fluid, and thermal systems. (Formerly ME 4522 and ME 4523. Credit cannot be earned for more than one of the following: ME 3543, ME 4522, or ME 4523.)

3663 Fluid Mechanics
(3-0) 3 hours credit. Prerequisites: EGR 2323, EGR 2513, ME 2173 and ME 3293.
Fluid properties, fluid statics, integral and differential analysis of fluid flow, viscous laminar and turbulent flow in conduits, dimensional analysis, boundary layer concepts, drag and lift.

3813 Mechanics of Solids
(3-0) 3 hours credit. Prerequisite: EGR 2103.
Internal forces and deformations in solids, stress, strain and their relations, torsion, stresses and deflections in beams, and elastic behavior of columns.

3823 Machine Element Design I
(3-0) 3 hours credit. Prerequisites: ME 1402, ME 3244 (or ME 3241 and ME 3243 in previous catalogs), and ME 3813.
Introduction to design of machine elements, pressurized cylinders, press and shrink fits, curved beams and contact stresses, static and fatigue theories of failure, shafts and shaft components, welded and bolted connections, mechanical springs, and computer-aided design projects. (Formerly ME 4423. Credit cannot be earned for both ME 3823 and ME 4423.)

4133 CAD/CAE
(3-0) 3 hours credit. Prerequisite: ME 3823.
Study of the principles of computer-aided engineering and computer-aided design in mechanical engineering; parametric, feature-based solid modeling; kinematics/dynamics of assemblies and finite element modeling using a general purpose finite element analysis software (ANSYS), and design case studies/projects.

4183 Compressible Flow and Propulsion Systems
(3-0) 3 hours credit. Prerequisites: ME 3293 and ME 3663.
Application of mass, energy, and force balance to compressible fluids, analysis of one-dimensional steady flow, isentropic flow, adiabatic flow, flow with heat addition, supersonic flow, and shock waves. Introduction to the analysis and design of air-breathing engines for aeronautical transportation. (Formerly EGR 4183. Credit cannot be earned for both ME 4183 and EGR 4183.)

4243 Intermediate Materials Engineering
(3-0) 3 hours credit. Prerequisites: ME 3244 (or ME 3241 and ME 3243 in previous catalogs) and ME 3813.
Selected topics in macroscopic and microscopic aspects of the mechanical behavior of metals, ceramics, polymers and composites, introduction to dislocation theory, temperature dependent deformations, engineering failures, and fracture mechanics.

4293 Thermodynamics II
(3-0) 3 hours credit. Prerequisites: EGR 2323 and ME 3293.
Energy and availability analysis, reactive and nonreactive mixtures, moist air properties, psychometric systems and analysis, vapor and gas power cycles, refrigeration and heat-pump cycles, thermodynamic relations, and chemical equilibria.

4313 Heat Transfer
(3-0) 3 hours credit. Prerequisites: EGR 3323 and ME 3663.
Generalized potential distribution and gradients, transient and steady heat transfer including conduction, forced and free convection, radiation, and thermal boundary layers.

4323 Thermal Systems Design
(3-0) 3 hours credit. Prerequisite: ME 4313.
Application of basic thermodynamics, fluid mechanics, heat transfer, and computer methods to the design of heat exchangers, coils, fans, pumps, and thermal energy systems.

4343 Heating, Air Conditioning, and Refrigeration Design
(3-0) 3 hours credit. Prerequisites: ME 4293 and ME 4313.
Moist air properties, human comfort, solar radiation, heating loads, design selection, construction, and operation of air conditioning equipment, and duct design.

4433 Machine Element Design II
(3-0) 3 hours credit. Prerequisite: ME 3823.
Design of spur, helical, bevel and worm gears; journal and rolling bearings; design of couplings, clutches, brakes, and flywheels; and computer-aided design projects.

4543 Mechatronics
(2-3) 3 hours credit. Prerequisites: ME 3113 and ME 3543.
Study of electromechanical design as coupled with control systems; integration of sensors; topics in input signal conditions (aliasing, quantization, etc.). Lab will include use of MATLAB® and Simulink®, modeling and hardware-in-the-loop testing.

4553 Automotive Vehicle Dynamics
(3-0) 3 hours credit. Prerequisites: EGR 2323 and EGR 2513.
Dynamics and control of automotive systems, handling, tires, suspension, steering, and aerodynamic forces.

4563 Computer Integrated Manufacturing
(3-1) 3 hours credit. Prerequisite: ME 3263.
Fundamental concepts and models related to computer-aided design, computer-aided process planning, computer-aided manufacturing, production planning and scheduling, and manufacturing execution systems. Laboratory work includes computer-aided applications and programming of automated production equipment.

4573 Facilities Planning and Design
(3-0) 3 hours credit. Prerequisite: ME 3263.
Product, process, and schedule design, flow, space, and activity relationships, material handling, layout planning models and design algorithms, and warehouse operations.

4583 Enterprise Process Engineering
(3-0) 3 hours credit. Prerequisite: ME 3263.
Fundamental concepts, methodologies, and tools for the design, engineering and continuous improvement of enterprises. Topics include Six Sigma for process design and improvement, lean manufacturing fundamentals, value-stream mapping, performance evaluation, and other contemporary enterprise process engineering approaches.

4593 Alternative Energy Sources
(3-0) 3 hours credit. Prerequisites: ME 4293 and ME 4313.
Solar, nuclear, wind, hydrogen, and geothermal energy sources. Resources, production, utilization, economics, sustainability, and environmental considerations. (Formerly ME 3593. Credit cannot be earned for both ME 3593 and ME 4593.)

4603 Finite Element Analysis
(3-0) 3 hours credit. Prerequisites: EGR 3323, ME 2173 and ME 3823.
Finite element method fundamentals, advanced geometric modeling of mechanical components and systems, and finite element modeling of components.

4613 Power Plant System Design
(3-0) 3 hours credit. Prerequisites: ME 4293 and ME 4313.
Application of thermodynamics and fluid mechanics to the design of vapor and gas-turbine power plant systems including boilers, condensers, turbines, pumps, compressors, and cooling towers.

4623 Internal Combustion Engines
(3-0) 3 hours credit. Prerequisites: ME 4293 and ME 4313.
Application of thermodynamic cycles in design, analysis, and modeling of internal combustion engines including spark-ignition and compression-ignition cycles, thermochemistry, fuels, combustion, emissions, and pollution.

4663 Fluid Systems Design
(3-0) 3 hours credit. Prerequisite: ME 3663.
Review of fundamental laws in integral form, differential continuity, momentum, and energy equations; Navier-Stokes equations for laminar and turbulent flow, potential flow theory, and design of fluid systems.

4673 Mechanical Systems Design
(3-0) 3 hours credit. Prerequisites: ME 3543 and ME 3823.
Integration of machine elements, joints and links into comprehensive systems with practical applications.

4723 Reliability and Quality Control in Engineering Design
(3-0) 3 hours credit. Prerequisite: ME 3113.
Introduction to statistical methods in reliability and probabilistic engineering design methodology, statistical quality control and inspection, life prediction and testing, and design optimization.

4733 Mechanical Engineering Laboratory
(2-3) 3 hours credit. Prerequisites: ME 3113 and ME 3813. Completion of or concurrent enrollment in ME 4313 is required.
Transducers and signal conditioning, strain, force, acceleration, controls, vibration, rotating machinery, fluid flow, heat transfer, thermodynamics, internal combustion engines, and design of experiments. (Formerly ME 4702. Credit cannot be earned for ME 4702 and ME 4733. Prior completion of ME 4702 and ME 4802 can be substituted for this course.)

4773 Fundamentals of Robotics
(3-0) 3 hours credit. Prerequisite: ME 3543.
Fundamental analysis and control methods of robot manipulators will be taught in this course. Kinematics and dynamics of robotic systems will be studied. Project for the design and analysis of a robotic system with practical application is expected.

4812 Senior Design I
(2-0) 2 hours credit. Prerequisites: ME 3263, ME 3543 and ME 3823. Completion of or concurrent enrollment in ME 4313, ME 4543 (or ME 3513 in previous catalogs) and ME 4733 required.
Design project proposals, computer-aided synthesis, analysis, and modeling of an open-ended problem development and presentation of conceptual designs. Industrial cooperation is encouraged. (Formerly ME 4811. Credit cannot be earned for both ME 4811 and ME 4812.)

4813 Senior Design II
(2-3) 3 hours credit. Prerequisite: ME 4812.
Development of a working design of an instructor-approved design project using computer-aided synthesis, analysis, modeling, and optimization methods. Industrial cooperation encouraged. Considerations of safety, reliability, environmental, and economic constraints, and ethical and social impacts.

4911-3 Independent Study
1 to 3 hours credit. Prerequisite: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4953 Special Studies in Mechanical Engineering
(3-0) 3 hours credit. Prerequisite: Will depend on the topic.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4963 Mechanical Engineering Applications to Biomedical Systems
(3-0) 3 hours credit. Prerequisites: EGR 2513, ME 3663 and ME 3813.
Applications of dynamics, solid mechanics and fluid mechanics to biomedical systems. (Formerly titled "Bioengineering.")

Media Studies (MES)

Department of Modern Languages and Literatures, College of Liberal and Fine Arts

3113 Film Studies
(3-0) 3 hours credit. Prerequisite: WRC 1023 or the equivalent. CSH 2113 recommended.
Advanced analysis of selected films according to genre, director, or national cinema. May be repeated for credit when topics vary.

3333 Digital Video Production
(2-3) 3 hours credit. Prerequisite: WRC 1023 or the equivalent.
Theory and practice of digital video production for the humanities. Writing a storyboard, shooting a story, and editing using professional equipment. May be repeated for credit when topics vary.

4333 Digital Video Practicum
(3-2) 3 hours credit. Prerequisite: MES 3333 or consent of instructor.
Advanced digital video production for the humanities. Specialized community service projects. May be repeated for credit when topics vary.

Mexican American Studies (MAS)

Department of Bicultural-Bilingual Studies, College of Education and Human Development

2013 Introduction to Chicano(a) Studies
(3-0) 3 hours credit.
An introduction to the field of Chicano(a) studies from its inception to the present. Chicano(a) studies and scholarship are explored through multidisciplinary concepts, theory, and methodologies, providing differing interpretations of the Chicano and Chicana experience in the United States. (Formerly BBL 2013. Credit cannot be earned for both MAS 2013 and BBL 2013.)

2023 Latino Cultural Expressions
(3-0) 3 hours credit.
An introductory overview of Hispanic visual, performing, and folk arts from their origins in the Iberian peninsula, through the later blending of cultures and their parallelism during revolutionary periods, to contemporary Latino expressions in the United States. (Same as BBL 2023. Credit cannot be earned for both MAS 2023 and BBL 2023.)

3003 Musical Mestizaje
(3-0) 3 hours credit.
Designed to examine Mexican American experience at the borders where the cultural form of music becomes a way of expressing cultural contact, tension, conflict as well as accommodation and resistance. Music becomes a site of excavating issues of inheritance as well as understanding the dynamics of creative expression. Course reflects historical and social contexts to engage the cultural production of the genres and themes of music found in Mexican American communities.

3013 Chicana/o Queer Communities, Identities and Theories
(3-0) 3 hours credit.
Through an intersectional lens that addresses gender and sexuality in conjunction with race and class, this course examines concepts of identity, community, and belonging for and by Mexican American lesbian, bisexual, transgender, intersex and queer communities. Topics may include language, migration, history, health, family and kinship.

3033 Mexican Americans in the Southwest
(3-0) 3 hours credit.
Historical foundations of the United States–Mexico biculturalism in the Southwest. An examination of the historical forces that created and shaped the Mexican American people as a bicultural community. Attention is given to Mexican American contributions in arts, economics, literature, and politics. (Same as BBL 3033. Credit cannot be earned for both MAS 3033 and BBL 3033.)

3043 Social Psychological Considerations in Mexican American Communities
(3-0) 3 hours credit.
A cross-cultural and social psychological study of human development, interethnic communication, stereotyping, learning styles, or other topics relevant to the bicultural setting. (Same as BBL 3043. Credit cannot be earned for both MAS 3043 and BBL 3043.)

3413 Mexican American Family
(3-0) 3 hours credit.
This course offers an examination of the social status of Mexican Americans and their relationship to the dominant society. Issues may include the position of Mexican Americans in economic, political, and status hierarchies and the major factors limiting mobility within these systems. (Formerly BBL 3413. Same as SOC 3413. Credit cannot be earned for more than one of the following: BBL 3413, MAS 3413, or SOC 3413.)

4083 Research Seminar in Mexican American Studies
(3-0) 3 hours credit.
Provides students the opportunity to compare, contrast, and integrate social science theory and methods, and guides students in the conduct of sociocultural research in the Mexican American community. Emphasis will be given to qualitative and ethnographic methods and theory. (Formerly BBL 4083. Credit cannot be earned for both MAS 4083 and BBL 4083.)

4931-3 Internship in Mexican American Studies
1 to 3 hours credit.
A supervised experience, relevant to the student's program of study within selected community organizations and agencies. Must be taken on a credit/no-credit basis.

4953 Special Studies in Mexican American Studies
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. To apply credit earned in MAS 4953 toward a minor, consent of the academic advisor in the COEHD Advising and Certification Center is required.

4993 Honors Thesis
3 hours credit. Prerequisites: Enrollment limited to candidates for Honors in Mexican American Studies during their last two semesters; completion of honors examination and consent of the Honors College.
Supervised research and preparation of an honors thesis. May be repeated once with thesis advisor's approval.

Military Science (MSC)

Office of Undergraduate Studies

1011 Introduction to Army ROTC
(1-2) 1 hour credit.
Introduces personal challenges and competencies that are critical for effective leadership. Focuses on the personal development of life skills such as goal setting, time management, physical fitness, and stress management as they relate to leadership, officership, and the Army profession. Increase self-confidence through team study and activities in basic drill, rappelling, leadership reaction course, first aid, making presentations, and basic marksmanship. Learn fundamental concepts of professional leadership in classroom and outdoor laboratory environments. Students attend one hour of lecture, a required two hours of leadership laboratory plus participate in organized physical fitness training. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered.

1021 Introduction to Tactical Leadership
(1-2) 1 hour credit.
Overviews leadership fundamentals such as setting direction, problem solving, listening, presenting briefs, providing feedback, and using effective writing skills. Students will explore dimensions of leadership attributes and core leader competencies in the context of practical, hands-on, and interactive exercises and will learn and apply principles of effective leading. Reinforce self-confidence through participation in physically and mentally challenging exercises with upper-division ROTC students. Develop communication skills to improve individual performance and group interaction. Relate organizational ethical values to leadership effectiveness. Students attend one hour of lecture, a required two hours of leadership laboratory plus participate in organized physical fitness training. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered.

2012 Foundations of Leadership
(2-2) 2 hours credit.
Explores the dimensions of creative and innovative tactical leadership strategies and styles by examining team dynamics and two historical leadership theories that form the basis of the Army leadership framework (trait and behavior theories). Students practice aspects of personal motivation and team building in the context of planning, executing, and assessing team exercises and participating in leadership labs. Focus is on continued development of the knowledge of leadership attributes and core leader competencies through an understanding of Army rank, structure, duties and basic aspects of oral presentations, concise writing, advanced first aid, land navigation, basic rifle marksmanship and basic military squad tactics. Students attend lecture and a required leadership laboratory plus participate in physical fitness training. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. (Formerly titled "Self/Team Development.")

2022 Foundations of Tactical Leadership
(2-2) 2 hours credit.
Examines the challenges of leading tactical teams in the complex Contemporary Operating Environment (COE). The course highlights dimensions of terrain analysis, patrolling, and operation orders. Further study of the theoretical basis of the Army Leadership Requirements Model explores the dynamics of adaptive leadership in the context of military operations. MSC 2022 provides a smooth transition into MSC 3013. Students have an opportunity to develop greater self awareness as they assess their own leadership styles and practice communication and team-building skills. COE case studies give insight into the importance and practice of teamwork and tactics in real-world scenarios. Students attend lecture and a required leadership laboratory plus participate in physical fitness training. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. (Formerly titled "Individual/Team Military Tactics.")

3013 Leading Small Organizations I
(3-2) 3 hours credit. Prerequisites: MSC 1011, MSC 1021, MSC 2012, and MSC 2022, or consent of instructor.
Series of practical opportunities to lead small groups, receive personal assessments and encouragement, and lead in increasingly complex situations. Uses small unit tactics and opportunities to plan and conduct training for lower-division students both to develop such skills and as vehicles for practicing leading. Students attend three hours of lecture, two hours of leadership laboratory and organized physical fitness training weekly. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. Concurrent enrollment in KIN 1001 is recommended.

3023 Leading Small Organizations II
(3-2) 3 hours credit. Prerequisite: MSC 3013 or consent of instructor.
Continues methodology of MSC 3013. Students will analyze tasks and prepare written or oral guidance for team members to accomplish tasks. Students will also delegate tasks and supervise; plan for and adapt to the unexpected in organizations under stress; examine and apply lessons from leadership case studies; and examine the importance of ethical decision making in setting a positive climate that enhances team performance. Students attend three hours of lecture, two hours of leadership laboratory and organized physical fitness training weekly. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. Concurrent enrollment in KIN 1001 is recommended.

4013 Adaptive Leadership
(3-2) 3 hours credit. Prerequisite: MSC 3023 or consent of instructor.
Students will plan, conduct, and evaluate activities of the ROTC cadet organization; articulate goals and put plans into action; assess organizational cohesion and develop strategies to improve it; develop confidence in leadership skills and resource management; learn and apply various Army policies and programs. Students will study how Army values and leader ethics are applied in the Contemporary Operating Environment and how these values and ethics are relevant to everyday life. Students will study the Army officer's role in the Uniform Code of Military Justice, the counseling of subordinates, administrative actions and the management of an Army officer's career. Students attend three hours of lecture, two hours of leadership laboratory and organized physical fitness training weekly. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. Concurrent enrollment in KIN 1001 is recommended. (Formerly titled "Leadership Challenges and Goal Setting.")

4023 Leadership in a Complex World
(3-2) 3 hours credit. Prerequisite: MSC 4013 or consent of instructor.
Continues the methodology from MSC 4013. Students will identify and resolve ethical dilemmas; refine counseling and motivating techniques; examine tradition and law as related to leadership as an Army officer; prepare for a future as a successful Army lieutenant. Students attend three hours of lecture, two hours of leadership laboratory and organized physical fitness training weekly. Students will have an opportunity to participate in one weekend exercise; additional weekend exercises may be offered. Concurrent enrollment in KIN 1001 is recommended. (Formerly titled "Transition to Lieutenant.")

4033 Practical Leadership
(3-0) 3 hours credit. Prerequisite: MSC 4023 or consent of instructor.
Performance-oriented instruction and preparation for commissioning. Additional development of students' ability to plan, coordinate, and direct the efforts of Army small-unit organizations in the execution of tactical missions; planning and execution of leadership laboratories.

Multidisciplinary Studies (MDS)

Office of Undergraduate Studies

4983 Senior Seminar for Multidisciplinary Studies
(3-0) 3 hours credit. Prerequisites: Declared major in Multidisciplinary Studies in semester of graduation and permission of the Multidisciplinary Studies Program Coordinator.
The seminar surveys topics in ethics, reinforces writing and communication skills through oral and written presentations and discussions, demonstrates student's progress through a capstone portfolio, and culminates in a senior project approved by the instructor.

Music (MUS)

Department of Music, College of Liberal and Fine Arts

1102 Aural Skills I [TCCN: MUSI 1216.]
(2-0) 2 hours credit. Enrollment is limited to music majors and minors.
Offers the opportunity for training in sight-singing, aural skills, and keyboard application. Should be taken concurrently with MUS 1112. May not be attempted more than three times.

1112 Basic Skills of Music I [TCCN: MUSI 1211.]
(2-1) 2 hours credit. Enrollment is limited to music majors and minors.
A survey of fundamentals and concepts of music. Emphasis on rudiments and melody, with an introduction to harmony. Materials from a variety of style periods are studied. Should be taken concurrently with MUS 1102. May not be attempted more than three times.

1122 Aural Skills II [TCCN: MUSI 1217.]
(2-0) 2 hours credit. Prerequisite: MUS 1102 or the equivalent. Enrollment is limited to music majors and minors.
Offers the opportunity to continue training in sight-singing and aural skills, with emphasis on rhythmic, melodic, and harmonic materials. Should be taken concurrently with MUS 1132. May not be attempted more than three times.

1132 Basic Skills of Music II [TCCN: MUSI 1212.]
(2-1) 2 hours credit. Prerequisite: MUS 1112 or the equivalent. Enrollment is limited to music majors and minors.
Offers the opportunity for development of harmonic analytical and writing skills. Analytical techniques are applied to music from a variety of style periods, and includes an introduction to small forms. May not be attempted more than three times.

1421 Class Piano for the Non-Music Major
1 hour credit. Prerequisite: Consent of instructor.
For students with little or no piano background. Basic musical and technical skills of hand position, tone production, memorization, sight-reading, and musical style are introduced through the study of technical exercises and solo literature. Topics include Level 1 and Level 2. May be repeated for credit at a more advanced level.

1511 Music Performance-Secondary Instrument
1 hour credit. Enrollment is limited to music majors.
Placement by audition. Private instruction for students desiring to or required to study the following as a secondary instrument: bassoon, clarinet, contrabass, cornet, electric bass, euphonium, flute, classical guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Seminar attendance may be required. Concurrent enrollment in an assigned University ensemble is required. May be repeated for credit.

1512 Music Performance-Private Instruction
2 hours credit. Enrollment is limited to music majors.
Placement by audition. Private instruction for all first-semester students, both freshmen and transfer students, desiring to or required to study the following instruments: bassoon, clarinet, contrabass, cornet, electric bass, euphonium, flute, classical guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Seminar attendance may be required. Students must earn a grade of "C–" or higher to progress to MUS 1542. Concurrent enrollment in an assigned University ensemble is required. May be repeated for credit a maximum of two semesters.

1521 Class Piano 1 [TCCN: MUSI 1181.]
1 hour credit. Prerequisite: Music major or consent of instructor.
Focuses on the development of functional keyboard skills for the non-keyboard music major. Emphases include solo and ensemble repertoire, technique, sight reading, transposition, harmonization, improvisation, and accompanying.

1531 Class Voice [TCCN: MUSI 1183.]
(1-0) 1 hour credit.
For students with no previous vocal training. Offers the opportunity for development of fundamentals of voice technique through in-class performances of suitable songs. May be repeated for credit.

1542 Music Performance-Private Instruction I
2 hours credit. Prerequisite: Successful completion of MUS 1512 with a grade of "C–" or better or placement by audition. Limited to music majors.
Private instruction for students desiring to or required to study the following instruments: bassoon, clarinet, contrabass, cornet, electric bass, euphonium, flute, classical guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Seminar attendance may be required. Concurrent enrollment in an assigned University ensemble is required. May be repeated for credit a maximum of three semesters.

1552 Functional Piano for Keyboard Principals
(2-0) 2 hours credit. Prerequisite: Music major with piano or organ as the principal instrument or consent of instructor.
Offers the opportunity for development of keyboard skills, harmonization, transposition, and improvisation of accompaniments to melodies, sight-reading, score reading, and multiple-part reading.

1621 Class Piano 2
1 hour credit. Prerequisite: Music major or consent of instructor.
Continues the development of functional keyboard skills for the non-keyboard music major. Emphases include solo and ensemble repertoire, technique, sight reading, transposition, harmonization, improvisation, and accompanying.

2001 Concert Music
(1-0) 1 hour credit. Prerequisite: Music major or minor.
Required attendance at a selected number of approved music concerts and recitals as determined by the Department of Music. May be repeated for credit.

2102 Aural Skills III [TCCN: MUSI 2216.]
(2-0) 2 hours credit. Prerequisite: MUS 1122 or the equivalent. Enrollment is limited to music majors.
Offers the opportunity to continue training in sight-singing and aural skills, with emphasis on rhythmic, melodic, and harmonic materials applied to the literature and theory drawn from MUS 2152. Should be taken concurrently with MUS 2152. May not be attempted more than three times.

2112 Aural Skills IV [TCCN: MUSI 2217.]
(2-0) 2 hours credit. Prerequisite: MUS 2102 or the equivalent. Enrollment is limited to music majors.
Application of skills to materials drawn from MUS 2162 Basic Skills of Music IV. Should be taken concurrently with MUS 2162. May not be attempted more than three times.

2122 Aural Skills Review
2 hours credit. Prerequisite: MUS 2112 or the equivalent. Enrollment is limited to music majors.
Private study and review of aural skills materials for incoming transfer students and other music majors. Designed to satisfy deficiencies indicated by the music theory proficiency exam. Offers an overview of sight-singing methodology and ear training techniques as well as an opportunity to train in aural skills with an emphasis on rhythmic, melodic, and harmonic materials applied to literature and theory drawn from MUS 1132 and MUS 2152.

2132 Introduction to Improvisation [TCCN: MUSI 1263.]
2 hours credit. Prerequisites: MUS 1112 and MUS 1512. Enrollment is limited to music majors.
Private instruction for development of creative skills applied to melodic, rhythmic, and harmonic elaboration techniques adapted to the student's instrument. Laboratory attendance may be required. May be repeated for credit a maximum of three semesters.

2142 Composition I [TCCN: MUSI 1286.]
2 hours credit. Prerequisites: MUS 1102, MUS 1112, and consent of instructor.
Private study of the fundamentals of composition through small forms. Seminar attendance is required.

2152 Basic Skills of Music III [TCCN: MUSI 2211.]
(2-1) 2 hours credit. Prerequisite: MUS 1132 or the equivalent. Enrollment is limited to music majors.
A survey of the chromatic materials of music with an emphasis on writing and analytical skills. Includes an introduction to large-scale form. Should be taken concurrently with MUS 2102. May not be attempted more than three times.

2162 Basic Skills of Music IV [TCCN: MUSI 2212.]
(2-1) 2 hours credit. Prerequisite: MUS 2152 or the equivalent. Enrollment is limited to music majors.
The continued study of chromatic materials of music, large-scale forms, and an introduction to analytical techniques for early 20th-century music. Should be taken concurrently with MUS 2112. May not be attempted more than three times.

2183 Jazz Skills
3 hours credit. Prerequisites: MUS 1122 and MUS 1132, or their equivalents.
The study of harmonic, melodic, rhythmic and formal elements of jazz as applied to improvisation, performance, arranging, and composition. (Formerly MUS 2182. Credit may not be earned for both MUS 2183 and MUS 2182.)

2232 Introduction to Guitar Literature
2 hours credit. Prerequisite: Music major status.
An introductory study of the history and literature of the modern concert guitar and its historical predecessors. Designed to improve students' understanding of the solo repertoire for their instrument throughout the 16th–20th centuries.

2243 World Music in Society [TCCN: MUSI 1309.]
(3-0) 3 hours credit.
A survey of the music cultures of Africa, the Americas, Asia and Oceania. Music traditions are studied from a perspective that emphasizes music as an integral part of society and culture. (Formerly MUS 2252. Credit may not be earned for both MUS 2243 and MUS 2252.)

2263 Introduction to the Music Industry
(3-0) 3 hours credit. Prerequisite: Consent of instructor required for non-music majors.
A survey of the various structures and facets of the modern American music industry, focusing on how music and commerce have intersected in our society throughout the 20th century and into the present. Topics include intellectual property (copyright, licensing, publishing), artist management, concert promotion, arts administration, recording industry, broadcast music, and music on the Internet.

2273 Introduction to Music Nonprofit Organizations
(3-0) 3 hours credit. Prerequisite: Consent of instructor required for non-music majors or non-music minors.
An introduction to the world of nonprofit music organizations, with an emphasis on classical music presentation. Focused on strategies of management, financial structuring, artistic direction, and marketing, primarily within the context of opera companies, symphony orchestras, ballet companies, and chamber music organizations. Includes an examination of the challenges of audience development and discussion of classical music's role in contemporary society.

2403 Conducting I
(3-1) 3 hours credit. Prerequisite: MUS 1132 or the equivalent.
Fundamentals of beat patterns, score mechanics and score reading, regular and irregular meters, gesture design, left-hand cueing, and rehearsal techniques. Instrumental Music Laboratory attendance may be required.

2413 Conducting II
(3-1) 3 hours credit. Prerequisite: MUS 2403 or the equivalent.
Offers the opportunity for continued training in conducting, emphasizing score reading, rehearsal techniques, expressive conducting, score interpretation, and repertoire. Topics include Choral Conducting and Instrumental Conducting. For instrumental topic, Instrumental Music Laboratory attendance may be required.

2421 Class Piano 3
1 hour credit. Prerequisite: Music major or consent of instructor.
Continues the development of functional keyboard skills for the non-keyboard music major. Emphases include solo and ensemble repertoire, technique, sight reading, transposition, harmonization, improvisation, and accompanying. Also focuses on developing multiple-part sight reading skills.

2501 Accompanying
(0-2) 1 hour credit.
The study of the skills and aesthetic principles needed to accompany vocal and instrumental music. Practical experience may be accomplished through accompanying. Intended for piano principals and piano performance majors. May be repeated for credit.

2521 Class Piano 4
1 hour credit. Prerequisite: Music major or consent of instructor.
Continues the development of functional keyboard skills for the non-keyboard music major. Emphases include solo and ensemble repertoire, technique, sight reading, transposition, harmonization, improvisation, and accompanying. Also focuses on developing multiple-part sight reading skills.

2542 Music Performance-Private Instruction II
2 hours credit. Prerequisite: MUS 1542 or placement by audition. Enrollment is limited to music majors.
Private instruction for students desiring to or required to study the following instruments: bassoon, clarinet, contrabass, cornet, electric bass, euphonium, flute, classical guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Seminar attendance may be required. Concurrent enrollment in an assigned University ensemble is required. May be repeated for credit a maximum of three semesters.

2601 Diction Survey [TCCN: MUSI 1162.]
(1-1) 1 hour credit.
A survey of English and foreign language pronunciation as applied to performance. (Formerly MUS 3501. Credit cannot be earned for both MUS 2601 and MUS 3501.)

2603 Beginning Guitar
(3-0) 3 hours credit.
An introductory course intended primarily for the non-Music major. Emphasis will be on music in the first position (through the fourth fret) while students learn technical aspects as defined by the early 19th-century guitar masters.

2613 Intermediate Guitar
(3-0) 3 hours credit. Prerequisite: MUS 2603 or the equivalent.
Designed primarily for the non-Music major. Continued study of rudimentary classical guitar repertoire and basic elements of classical guitar technique.

2623 Fundamentals of Music for the Non-Music Major
[TCCN: MUSI 1301.]
(3-0) 3 hours credit.
A study of traditional music notation and the fundamentals of music theory. Topics will include music reading, rhythmic notation, intervals, scales, triads, and key signatures. Emphasis is placed on the historical development of music notation and music theoretical systems and their applications to both classical and popular music.

2633 American Roots Music [TCCN: MUSI 1310.]
(3-0) 3 hours credit.
A survey of Blues, Country and Western, Gospel, Cajun, Zydeco, Conjunto, Tejano, Reggae, Native American, and other uniquely American genres of music that evolved from regional, home-grown traditions into the mass market phenomenon of American popular music today. Designed to provide the opportunity for students to increase their awareness of the diversity of American traditional music, from the pioneers who originated the styles to the contemporary popular music artists influenced by them.

2663 History and Styles of Jazz
(3-0) 3 hours credit.
A survey of the evolution of jazz styles, contributions of important performers, and musical techniques involved in the creation and performance of jazz music.

2673 History and Styles of Rock
(3-0) 3 hours credit.
A survey of the evolution of rock styles, contributions of important performers, and musical techniques involved in the creation and performance of rock music.

2683 Masterpieces of Music [TCCN: MUSI 1306.]
(3-0) 3 hours credit.
A study of individual works selected from and representative of the musical traditions of the Western world. Background information on social setting and function, historical importance, aesthetics, and composers' biographies.

2693 The Music of Latin America and the Caribbean
(3-0) 3 hours credit.
Surveys the folk, popular, and classical musical traditions of Latin America, with special emphasis on the principal regions of Mexico, Brazil, Argentina, and the Andes. (Formerly MUS 1213. Credit cannot be earned for both MUS 2693 and MUS 1213.)

2703 History and Traditions of Mariachi Music
(3-0) 3 hours credit.
A survey of the history and evolution of the mariachi tradition within a musical and cultural context including its development from a rural regional music style to a global cultural icon. Topics will include the evolution of instrumentation, regional genres, interpretive styles, and the transformation from small ensemble to modern mini-orchestra.

2743 Music and Film
(3-0) 3 hours credit.
A survey of the evolving role of music in film. Students will have the opportunity to develop an understanding of how film music is created, manufactured, and consumed by exploring various creative, technological, industrial, economic, historical, social, and cultural factors.

2753 American Musical Theater
(3-0) 3 hours credit.
A survey of the evolution of American musical theater with emphasis on the cultural and political influences that shaped it. Examines the synthesis of music, theater arts and dance. Outlines the contributions of important composers, directors, choreographers and performers.

3013 Digital Music Production
(3-1) 3 hours credit.
Survey of concepts and development of skills related to current computer-based music production. Topics include MIDI and audio sequencing, tonal synthesis, acoustics, digital audio editing, sound processing, basic live recording, and music distribution. This is the entry course for UTSA's Certificate in Music Technology program. (Formerly MUS 3313. Credit cannot be earned for both MUS 3013 and MUS 3313.)

3103 Audio Technology I
(3-0) 3 hours credit.
Fundamental concepts of digital and analog audio recording. Topics will include a historical survey of audio technology, critical listening, terminology, digital audio systems, signal flow, microphone selection and placement, techniques for live stereo recording, basic processing and effects, and an introduction to current standard workflows for recording, editing, and mixing. (Formerly MUS 3153. Credit cannot be earned for both MUS 3103 and MUS 3153.)

3113 Analysis of Tonal Music
(3-0) 3 hours credit. Prerequisites: MUS 2112 and MUS 2162, or consent of instructor.
Analysis of forms and structures from the common practice era of tonal music beginning with a study of such smaller structural units as periods, binaries, and ternaries. Major emphasis is placed on such larger forms and genres as fugue and other contrapuntal types, sonata, and rondo.

3123 Introduction to Electronic and Computer Music
3 hours credit. Prerequisite: Consent of instructor required for non-music majors.
Private study serving as a conceptual and practical introduction to digital audio workstation software, synthesizers, sequencers, and other audio hardware and software for the purpose of creating original compositions, with an emphasis on sound-processing techniques and timbral manipulation. Includes a survey of the history and literature of electronic music.

3133 Analysis of Twentieth-Century Music
(3-0) 3 hours credit. Prerequisites: MUS 2112 and MUS 2162.
Analysis of forms and structures drawn from the literature and repertoire of the 20th century. Beginning with a review of late tonal practices, such styles and techniques as Impressionism, atonality, serialism, and pre- and post-serial tonality are studied in depth.

3143 Orchestration
(3-0) 3 hours credit. Prerequisites: MUS 2112 and MUS 2162, or their equivalents.
Applied instrumentation emphasizing idiomatic scoring for various orchestral and wind combinations with an approach to writing for full orchestra and symphonic band.

3162 Composition II
2 hours credit. Prerequisites: MUS 2112, MUS 2142, and MUS 2162.
Private study in applied composition, with emphasis on expansion of musical materials to larger forms. Seminar attendance is required. May be repeated for credit.

3163 Audio Technology II
(3-0) 3 hours credit. Prerequisite: MUS 3103 or consent of instructor.
A continuation of Audio Technology I. Topics include preproduction, session planning, detailed topics in microphone selection and placement, editing and manipulation of recorded sound; advanced applications for equalization, compression, reverb, delay, and other effects; integration of software synthesis and sequencing in the audio workstation environment; automation and mixing. The course emphasizes hands-on application of learned concepts in a studio environment.

3172 Composition in Electronic Media
2 hours credit. Prerequisite: MUS 3123.
Private study in composition, with an emphasis on such electroacoustic music techniques as digital sound synthesis and sampling, including an in-depth study of various computer applications in music. Seminar attendance is required. May be repeated for credit.

3213 Music in Civilization I
(3-0) 3 hours credit. Prerequisites: MUS 2112 and MUS 2162, or their equivalents.
A study of the development of musical styles and literatures from antiquity to 1750, with emphasis on the parallels and influences of art, architecture, literature, and theater on musical art. In addition, the adaptation and influences of non-Western traditions and styles on Western art music will be considered.

3223 Music in Civilization II
(3-0) 3 hours credit. Prerequisites: MUS 2112 and MUS 2162, or their equivalents.
A study of the development of musical styles and literatures from the Enlightenment to the present, with emphasis on the parallels and influences of art, architecture, literature, and theater on musical art. In addition, the adaptation and influences of non-Western traditions and styles on Western art music will be considered.

3232 Wind and Percussion Literature
2 hours credit. Prerequisites: MUS 2112 and MUS 2162.
A study of music for the concert band at all grade levels including method books for individual instruction. The course will focus on investigating repertoire for different levels of educational groups and/or individuals, from beginning band through more advanced wind ensembles.

3242 String Literature
2 hours credit. Prerequisites: MUS 2112 and MUS 2162.
A study of music literature and analysis at an advanced level in such topics as orchestral literature, both string and full orchestra, as well as chamber music and solo repertoire. The course will focus on investigating repertoire for different levels of educational groups and/or individuals, from beginning string orchestras through more advanced high school full symphonies. Leveled repertoire lists such as the PML will be considered and used as references.

3252 Topics in Music Literature
(2-1) 2 hours credit. Prerequisites: MUS 2112 and MUS 2162.
A study of music literature at an advanced level. May be repeated for credit when topics vary. (Formerly titled "Advanced Studies in Music Literature and Analysis.")

3263 Music Since 1900
(3-0) 3 hours credit. Prerequisites: MUS 2112 and MUS 2162.
Designed to provide the student with a working knowledge of the music, terms and techniques of art music written from 1900 to the present day. The focus will be on specific compositions emphasizing questions of genre, form, and compositional style but also drawing upon the musicological literature to explore a variety of broader historical and cultural issues.

3272 Choral Literature
2 hours credit. Prerequisites: MUS 2112 and MUS 2162.
A survey of major choral composers, genres, works, and styles. Topics include Renaissance to Baroque Choral Literature, and Classical to 20th-Century Choral Literature. May be repeated for credit when topics vary.

3282 Vocal Literature
2 hours credit. Prerequisites: MUS 2112 and MUS 2162.
A study of vocal literature and stylistic considerations at an advanced level in such topics as the American Art Song, the German Lied and the French Mélodie.

3292 Operatic Literature
2 hours credit. Prerequisites: MUS 2112 and MUS 2162.
A study of the historical significance and literature of the opera form from its precursors through the present time.

3312 Music Technology for Music Educators
(2-1) 2 hours credit. Prerequisite: Consent of instructor.
Designed specifically for music studies majors. Topics include sequencing, notation, digital musical instruments, music instruction software, communication technologies, and digital media for the classroom. Students build online portfolios of technology projects for assessment and later use in job placement. (Formerly MUS 3311. Credit cannot be earned for both MUS 3312 and MUS 3311.)

3322 Keyboard Literature
2 hours credit. Prerequisites: MUS 2112 and MUS 2162.
A study of keyboard literature and analysis at an advanced level. Topics include Piano, Organ, and Harpsichord solo and chamber literature. Course is taught at two levels, Level I and Level II. May be repeated for credit when topics or levels vary.

3332 Advanced Guitar Literature
2 hours credit. Prerequisite: MUS 2232 or permission of instructor.
Advanced study of stylistic development in concert guitar literature, including solo and concerto repertoire from the 18th to the 21st centuries. Designed for guitar performance majors, but open to all music majors interested in classical guitar.

3342 Wind and Percussion Literature for Performances Majors
2 hours credit. Prerequisites: MUS 2112 and MUS 2162.
A study of wind or percussion literature and analysis at an advanced level. Topics include Solo and Chamber Literature, and Orchestral and Wind Band Literature. May be repeated for credit when topics vary.

3352 String Literature for Performance Majors
2 hours credit. Prerequisites: MUS 2112 and MUS 2162.
A study of string literature and analysis at an advanced level, covering such elements as orchestral literature, chamber music, and solo repertoire for each individual student's instrument, recital planning and preparation, excerpt study and preparation for auditions, score reading, and sight-reading skills. Topics include Solo and Chamber Literature, and Orchestral Literature. May be repeated for credit when topics vary.

3401 Brass Instruments
(1-1) 1 hour credit. Prerequisite: MUS 1132 or the equivalent.
A study of playing techniques, selection of materials, and maintenance of brass instruments. Instrumental Music Laboratory attendance may be required.

3413 Psychology of Music
(3-1) 3 hours credit. Prerequisites: MUS 2112 and MUS 2162.
An approach to the foundations of music from different disciplinary perspectives. Focuses on music in contemporary society; current research from anthropology, biology, psychology, sociology, philosophy and aesthetics, economics, and ethics will be presented. (Formerly titled "Foundations of Music.")

3421 Vocal Techniques for Instrumental Majors
(1-1) 1 hour credit.
A study of basic techniques of vocal production and vocal pedagogy, with a particular emphasis on voice mutation, voice classification, vocal health, the selection of appropriate repertoire and teaching of singing to young children, junior high and high school students. Designed to provide instrumental music majors with the opportunity to develop experience and familiarity with vocal music.

3431 Woodwind Instruments
(1-1) 1 hour credit. Prerequisite: MUS 1132 or the equivalent.
A study of the playing techniques and instructional methods of woodwind instruments. Instrumental Music Laboratory attendance may be required.

3441 Woodwind Instruments II
(1-1) 1 hour credit. Prerequisite: MUS 1132 or the equivalent.
A study of the playing techniques, selection of materials, and maintenance of saxophones, oboes, and bassoons. Instrumental Music Laboratory attendance may be required.

3453 Teaching Music in the Elementary School
(3-1) 3 hours credit. Prerequisites: MUS 1122 and MUS 1132. Enrollment is limited to music majors.
A study of the essential elements of music as they relate to children. (Formerly titled "Music Studies I.")

3463 Teaching Vocal and General Music in Grades 6–12
(3-1) 3 hours credit. Prerequisites: MUS 1122 and MUS 1132. Enrollment is limited to music majors.
Designed to develop skills necessary to teach secondary level choral and general music. (Formerly titled "Music Studies II.")

3471 String Instruments
(1-1) 1 hour credit. Prerequisite: MUS 1132 or the equivalent.
A study of playing techniques, pedagogy, selection of materials, and maintenance of string instruments. Instrumental Music Laboratory attendance may be required.

3481 Percussion Instruments
(1-1) 1 hour credit. Prerequisite: MUS 1132 or the equivalent.
A study of playing techniques, pedagogy, selection of materials, and maintenance of percussion instruments. Instrumental Music Laboratory attendance may be required.

3491 Instrumental Techniques for Voice Majors
(1-1) 1 hour credit.
A study of playing techniques, pedagogy, selection of materials, and maintenance of percussion, woodwind, brass, and string instruments. Designed to meet the needs of voice majors to have the opportunity to develop experience and familiarity with orchestral and band instruments. Instrumental Music Laboratory may be required.

3511 Diction for Singers
(1-1) 1 hour credit.
An intensive study of language pronunciation as applied to performance. Topics include English, French, Italian, and German. May be repeated for credit.

3523 Music and the Internet
(3-0) 3 hours credit. Prerequisites: MUS 1122, MUS 1132, MUS 2263, or their equivalents. Enrollment is limited to music majors and minors.
A study of the history and impact of the internet in the contemporary music world, with an emphasis on online alternatives to traditional structures of music distribution. Topics could include issues of copyright infringement, technological challenges to music ownership, and an overview of the development of online music.

3532 Music Performance-Private Instruction III
2 hours credit. Prerequisites: MUS 2112 and MUS 2162, and successful completion of two semesters of MUS 2542 or placement by audition. Enrollment is limited to music majors.
Private instruction for students desiring to or required to study the following instruments: bassoon, clarinet, contrabass, cornet, flute, classical guitar, electric bass, euphonium, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Seminar attendance may be required. Concurrent enrollment in an assigned University ensemble is required. May be repeated for credit a maximum of three semesters.

3543 Music Performance-Private Instruction IV
3 hours credit. Prerequisites: MUS 2112 and MUS 2162, and successful completion of two semesters of MUS 2542 or placement by audition. Enrollment is limited to students accepted to upper-division standing in the Performance emphasis of the Bachelor of Music degree program.
Private instruction at an advanced level in bassoon, clarinet, contrabass, cornet, euphonium, flute, classical guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Seminar attendance may be required. Concurrent enrollment in an assigned University ensemble is required. May be repeated for credit a maximum of three semesters.

3583 Advanced Improvisation
3 hours credit. Prerequisites: MUS 2132 and MUS 2183, or their equivalents.
Private instruction in applied improvisation on a student's instrument, emphasizing melodic creativity and performance within standard literature as well as newly composed materials. May be repeated for credit. Laboratory attendance may be required.

3613 Entrepreneurship in Music
(3-0) 3 hours credit. Prerequisite: MUS 2263. Open to music majors and minors only.
An advanced study of innovation in the business of music, including historical examination of social trends, technological advances, legal issues, and commercial practices that have influenced the development of the music industry in both the fine arts and popular culture. Strategies for career building in music business are explored with an emphasis on knowledge and skills that support entrepreneurial activities in music. (Formerly titled "American Music and Culture.")

3701 Chamber Singers
(0-3) 1 hour credit. Prerequisite: Consent of instructor by audition.
An ensemble specializing in the performance of outstanding chamber choral music from the Middle Ages to the present. Previous musical experience and reading ability required. The ensemble performs on and off campus. May be repeated for credit. (Formerly titled "Madrigal Singers.")

3711 Mariachi Ensemble
(0-3) 1 hour credit. Open to all students by audition.
Ensemble rehearses and performs the music repertoire of the Mexican folk mariachi tradition. May be repeated for credit.

3712 Concert Choir
(0-5) 2 hours credit. Open to all students by audition.
Select mixed ensemble open to all students by audition. This groups performs a variety of repertoire from all historical periods. May be repeated for credit.

3721 UTSA Men's Chorus
(0-3) 1 hour credit. Open to all male students without audition. No previous choral experience is necessary.
Many types of music are studied, and the repertoire is moderate in difficulty. May be repeated for credit. (Formerly titled "UTSA Chorus.")

3722 Women's Choir
(0-5) 2 hours credit. Open to all female students by audition.
Select women's ensemble open to all students by audition. This group performs a variety of repertoire from all historical periods. May be repeated for credit.

3731 UTSA University Band
(0-3) 1 hour credit. Open to all students by audition.
Ensemble rehearses and performs standard repertoire of concert band music. May be repeated for credit.

3741 Chamber Orchestra
(0-3) 1 hour credit. Open to all string students by audition.
This ensemble will study, rehearse, and perform literature from the string orchestra repertoire. May be repeated for credit.

3742 UTSA Wind Ensemble
(0-5) 2 hours credit. Open to all students by audition.
The wind ensemble studies, rehearses, and performs the repertoire for various combinations of wind instruments. May be repeated for credit.

3752 UTSA Symphonic Band
(0-5) 2 hours credit. Open to all students by audition.
Ensemble performs standard repertoire for the full symphonic band. May be repeated for credit.

3762 UTSA Orchestra
(0-5) 2 hours credit. Open to all students by audition.
The UTSA Orchestra studies, rehearses, and performs literature from the standard orchestral repertoire. May be repeated for credit. (Formerly MUS 3761.)

3771 Jazz Ensemble
(0-3) 1 hour credit. Open to all students by audition.
Ensemble specializes in the performance of the various streams of jazz and other music appropriate to stage bands, jazz ensembles, and vocal jazz groups. May be repeated for credit.

3792 Lyric Theatre
(0-5) 2 hours credit. Open to all students by audition.
The study and performance of opera and other types of musical theater from the Baroque period to the present. May be repeated for credit. (Formerly titled "Opera Workshop.")

3802 UTSA Marching Band
(0-5) 2 hours credit. Open to all students by audition.
Rehearses and performs music and marching drills for appearances at public events on and off campus. Participation at all performances is required in addition to regularly scheduled rehearsals. May be repeated for credit. (Formerly MUS 3801.)

4113 Counterpoint
3 hours credit. Prerequisites: MUS 2112 and MUS 2162.
Study of contrapuntal techniques of the 16th and 18th centuries. Topics include melodic line and motive, cadence, imitation, treatment of consonance and dissonance, species counterpoint, invention, canon, and fugue. Emphasis is placed on analysis and composition, with discussion of application to contemporary music. (Formerly titled "Composition with Contrapuntal Techniques.")

4142 Composition III
2 hours credit. Prerequisites: MUS 2112, MUS 2162, and MUS 3162, or consent of instructor.
Writing in the larger forms for small and large ensembles and electronic media. Seminar attendance is required. May be repeated for credit.

4153 Audio Technology III
(3-0) 3 hours credit. Prerequisite: MUS 3163 or consent of instructor.
Advanced recording and mixing techniques, master preparation, delivery formats, synchronization, complex session planning and management, the role and responsibilities of the producer, large-scale project planning and budgeting. Students are required to complete several projects to a high professional standard.

4163 Topics in Music Theory
(3-0) 3 hours credit. Prerequisites: MUS 2112 and MUS 2162.
Specialized instruction in advanced music theory. Topics include Schenkerian Analysis, advanced pitch-class set theory, pedagogy of music theory, analysis and performance, and genre, period and/or composer studies. May be repeated for credit when topics vary.

4183 Jazz Composition and Arranging
3 hours credit. Prerequisites: MUS 2112, MUS 2162, and MUS 2183, or their equivalents, or consent of instructor.
Private study in applied jazz composition and arranging, emphasizing writing for large jazz ensemble and studio orchestra. May be repeated for credit.

4263 Topics in Music History
(3-0) 3 hours credit. Prerequisites: MUS 2112, MUS 2162, MUS 3213, and MUS 3223, or consent of instructor.
A study of works and styles appropriate to the stylistic period of the topic. Topics include Middle Ages; Renaissance; Baroque Period; Classic Period; Romantic Period; Twentieth Century; and Music Practices and Styles. May be repeated for credit when topics vary. Topics may be taken concurrently.

4433 Multimedia Production
(3-0) 3 hours credit.
An overview of theories, skills, and hardware and software components of current multimedia production. Topics include digital image editing, digital sound editing, vector graphics and animation, multimedia integration, media Web page development, and interactive programming in actionscript and JavaScript. Aspects of artistic design are also introduced. Emphasis is placed on hands-on development of useful, effective products for instructional and commercial applications.

4452 Marching Band Techniques
(2-1) 2 hours credit. Prerequisites: MUS 2112 and MUS 2162.
A study of the repertoire, materials, instructional methods, administration, and maneuvers used by marching bands.

4531 Vocal Pedagogy I
(1-1) 1 hour credit. Prerequisites: MUS 2112 and MUS 2162.
Survey of techniques, practices, and materials related to the development of teaching of voice, including anatomy, physiology, acoustics, and the development of the human voice. (Formerly titled "Music Pedagogy I.")

4532 Music Pedagogy
(2-1) 2 hours credit. Prerequisites: MUS 2112 and MUS 2162.
Survey of techniques, practices, and materials related to the development and execution of music instruction. Review of materials for beginning, intermediate, and advanced students. Topics include Strings, Brass, Woodwinds, Percussion, Guitar, Piano, Organ, and Instrumental Ensemble. May be repeated for credit. Instrumental Ensemble topic requires successful completion of MUS 3401 and MUS 3431. Depending upon topic, Instrumental Music Laboratory attendance may be required.

4541 Vocal Pedagogy II
(1-1) 1 hour credit. Prerequisites: MUS 2112 and MUS 2162.
Practical application of techniques, practices, and materials related to the development and teaching of voice, including repertoire selection, supervised teaching, applying vocal pedagogy principles to group settings, and introducing students to voice technology. (Formerly titled "Music Pedagogy II.")

4543 Music Performance-Private Instruction V
3 hours credit. Prerequisites: MUS 2112 and MUS 2162, successful completion of two semesters of MUS 3543 or the equivalent, and placement by audition. Enrollment is limited to students accepted to upper-division standing in the Performance emphasis of the Bachelor of Music degree program.
Private instruction at an advanced level in bassoon, clarinet, contrabass, cornet, euphonium, flute, classical guitar, harp, harpsichord, horn, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violoncello, or voice. Seminar attendance may be required. Concurrent enrollment in an assigned University ensemble is required. May be repeated for credit a maximum of three semesters. (Formerly MUS 4544.)

4552 Supervised Student Teaching
(2-1) 2 hours credit. Prerequisite: Successful completion of MUS 4532 or consent of instructor.
Guided teaching of beginner and intermediate level students through supervised scenarios designed by the instructor. This course offers students the opportunity to apply teaching techniques and focus on problem-solving strategies within private or group settings. May be repeated for credit.

4561 Senior Recital
1 hour credit. Prerequisites: MUS 2112, MUS 2162, and consent of instructor. Concurrent enrollment in MUS 4543 is required of students in the Performance emphasis; concurrent enrollment in MUS 4142 is required of students selecting the Composition emphasis.
A public performance presented as a culmination of the student's private instruction.

4581 Chamber Music
1 hour credit. Open to all music majors by audition.
Designed to offer students the opportunity to gain knowledge of chamber music literature through performance of select repertoire. Instruction in brass ensemble, woodwind ensemble, percussion ensemble, string ensemble, mixed ensemble, jazz combo, vocal ensemble and chamber opera. May be repeated for credit.

4803 Seminar in Music Marketing
(3-0) 3 hours credit. Prerequisites: MUS 2263, MUS 3613, upper-division standing in Music Marketing, or consent of instructor.
An intensive, project-based study of music marketing oriented toward students' specific career interests in the music business and/or arts management.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933 Music Marketing Internship
3 hours credit. Prerequisites: MKT 3013, MUS 3613, MUS 4803, grade point average of 2.5 or higher, and permission in writing from the instructor.
The opportunity to gain knowledge through experience in the music industry under the supervision of private business professionals. Opportunities will be developed in consultation with the faculty advisor and appropriate business professionals.

4951-3 Special Studies in Music
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4961 Music Technology Project
1 hour credit. Prerequisites: Permission in writing from the instructor and Certificate Program Director.
A guided project in audio or multimedia. Students will have the opportunity to create a product that brings together knowledge of their major discipline with their specific skills in music technology.

Nonprofit Management (NPO)

Department of Public Administration, College of Public Policy

3003 Fundraising in Nonprofit Agencies
(3-0) 3 hours credit.
Examines methods, techniques, and directed experience in fundraising for nonprofit agencies. Explores relationships with umbrella organizations, government funding, grantsmanship, budget control, and accountability.

3013 Introduction to Nonprofit Agencies
(3-0) 3 hours credit.
An overview of the historical background, development, role, auspices, organization, and purposes of nonprofit agencies. Special emphasis is placed on structure, program, organizational management, planning and stewardship, fundraising, community building, volunteer services, and problems which confront these organizations. NPO 3013 should be taken in the student's first semester in the minor. (Same as PAD 3033. Credit cannot be earned for both NPO 3013 and PAD 3033.)

4911,3 Independent Study
1 or 3 hours credit. Prerequisite: Independent Study Course Form (available in the department or college advising center) signed by the instructor, the student's undergraduate advisor, Department Chair, and Dean of the College of Public Policy.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated once for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933,6 Internship in Nonprofit Management
3 or 6 hours credit. Prerequisite: Approval of Nonprofit Management Coordinator.
Supervised experience within selected not-for-profit agencies. Students must complete 150 clock hours of internship for the minor. May be repeated for credit, but not more than 6 semester credit hours may be earned through the internship.

4953 Special Studies in Nonprofit Management
(3-0) 3 hours credit.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated once for credit, but not more than 6 semester credit hours of special study, regardless of discipline, will apply to a bachelor's degree.

Philosophy (PHI)

Department of Philosophy and Classics, College of Liberal and Fine Arts

1043 Critical Thinking [TCCN: PHIL 2303.]
(3-0) 3 hours credit.
Introduces students to principles of informal reasoning, especially in practical contexts. Topics may include: forms of reasoning, decision making, organizing data, forming strategies, giving reasons, inductive reasoning, informal fallacies, and obstacles to sound thinking (perceptual, cultural, emotional, intellectual, and expressive) may also be addressed.

2013 Basic Philosophical Problems [TCCN: PHIL 1301.]
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Introduction to philosophy through general problems in metaphysics, epistemology, ethics, political philosophy, and philosophy of religion; emphasis on the writings of philosophers of various historical periods, especially as these doctrines apply to contemporary problems.

2023 Introduction to Ancient Philosophy [TCCN: PHIL 2316.]
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Introduction to ancient philosophy through the study of Plato, Aristotle, Epicurus, and others; emphasis on the Greek contribution to the moral and political ideas of the Western world.

2033 Introduction to Early Modern Philosophy [TCCN: PHIL 2317.]
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Introduction to early modern philosophy from the Renaissance to the Enlightenment through the study of Descartes, Locke, Berkeley, Hume, Spinoza, Leibniz, Kant or others.

2043 Introductory Logic [TCCN: PHIL 2303.]
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Introduces students to some of the modern formal systems used to distinguish between good and bad forms of reasoning in either or both of the deductive or inductive realms. Topics may include: translation from natural to formal languages, probability theory, scientific inductive reasoning, Bayesian reasoning, propositional calculus, predicate calculus, other kinds of formal deductive reasoning (e.g., modal, deontic or belief logics), natural deduction and/or other formal proof methods, problems in philosophical logic (denoting, elementary meta-logic, consistency and completeness of formal systems, elementary model theory etc.).

2063 Philosophy of Law
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Examination of the major issues in the philosophical foundations of law. Topics may include the nature of law, the interpretation of law, the limits of legal regulation, the nature of the obligation to obey the law, the justification of punishment, and a variety of ethical issues that arise in legal contexts. Recommended for pre-law students.

2123 Contemporary Moral Issues
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Examination of major moral theories and how they afford a rational approach to specific moral issues and a rational basis for resolving moral conflict. Emphasis may be placed on medical, social, engineering and business ethics. May not be repeated for credit. (Formerly titled "Moral Issues in Contemporary America.")

3013 Philosophy of Religion
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Examination of traditional religious beliefs and such concepts as faith and knowledge, mysticism and theology, the existence and nature of God, and the relation of religion to experience and social life.

3033 Philosophy of Science
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Examination of major issues in the philosophical foundations of the natural and social sciences, including scientific explanation, laws and theories, probability and induction, and the relation of scientific inquiry to the Western philosophical tradition.

3053 Philosophy of Art
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Examination of major philosophical theories of art, beauty, and aesthetic judgment, with emphasis on such problems as form and structure, communication in art, and meaning in aesthetic judgment.

3073 Asian Philosophy
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Examination of the philosophical and religious traditions of the East, with emphasis on various schools such as Vedanta, Buddhism, Confucianism, and Taoism.

3213 Ethics
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Examination of ethical theory and of the nature and scope of ethical discourse, with emphasis on the concepts of good, human happiness, self-realization, virtue, duty, responsibility, and the means-ends relationship. Reading will include selected classical and contemporary texts.

3223 Approaches to Knowledge and Reality
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Examination of the interrelations between the theory of knowledge and theory of reality, with emphasis on the nature and scope of human knowledge, sensation and understanding, truth and error, change and causality, possibility and actuality, and meaning and existence. Reading will include selected classical and contemporary texts.

3303 Nineteenth-Century Philosophy
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Examination of some of the major figures and topics in nineteenth-century philosophy and its intellectual background, including (but not limited to) these figures: Kant, Maimon, Bentham, Fichte, Schelling, Schopenhauer, Hegel, Kierkegaard, Marx, Mill, Nietzsche, Peirce, James, Dewey, Emerson, Thoreau; and these topics: philosophical aspects of German romanticism, idealism, utilitarianism, materialism, pragmatism, transcendentalism.

3343 Issues and Movements in Contemporary Philosophy
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Sustained study of one or more specific issues or movements from the end of the nineteenth century to the present day, such as philosophy of language, philosophy of mind, epistemology, political philosophy, theoretical or applied ethics, phenomenology, existentialism, hermeneutics, or postmodernism. May be repeated for credit when topics vary. (Formerly titled "Issues and Movements in Twentieth-Century Philosophy.")

3403 Philosophy in Literature
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
Examination of important philosophical questions, such as personal identity, the nature of moral value, and the limits of knowledge, as reflected in world literature, including such genres as fiction, drama, and poetry.

4013 Studies in Individual Philosophers
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Examination of the works of an individual philosopher or of several philosophers studied in relationship to one another. May be repeated for credit when topics vary.

4113 Contemporary Analytic Philosophy
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
An in-depth examination of the major trends in the development of the Anglo-American philosophical tradition since its inception at the end of the nineteenth century up to the present day, including the early analysts, the development of logical positivism, and the emergence of nonformal linguistic analysis.

4123 Contemporary Continental Philosophy
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
A sustained treatment of the major trends in Continental European philosophy since the end of the nineteenth century up to the present day, including movements such as phenomenology, existentialism, hermeneutics, and postmodernism; emphasis on historical development.

4333 Philosophy of Language
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
A critical examination of traditional problems dealing with the nature and function of language. Representative issues include analyticity, reference, proper names, metaphorical meaning, and speech-act theory.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4953 Special Studies in Philosophy
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4973 Seminar for Philosophy Majors
(3-0) 3 hours credit. Prerequisite: 12 upper-division semester credit hours in philosophy or consent of the instructor.
An advanced investigation of a single author, text, issue, or problem. Primary emphasis on supervised research on various aspects of the topic. May be repeated once for credit when topics vary.

4991-3 Honors Thesis
1 to 3 hours credit. Prerequisites: Consent of instructor and Department Scholarship and Honors Committee.
Supervised research and preparation of an Honors Thesis for the purpose of earning Philosophy Honors. May be repeated once with advisor approval.

Physics (PHY)

Department of Physics and Astronomy, College of Sciences

1013 Universes [TCCN: PHYS 1310.]
(3-0) 3 hours credit. Prerequisite: MAT 1023 or MAT 1073 or consent of instructor.
This course is an introduction to contemporary physics and cosmology. The goal is to study some of the profound discoveries in fundamental physics made during the 20th century, and how they have shaped our modern conception of the universe and of our place in it. Topics discussed include Einstein's theories of special and general relativity, quantum physics, modern cosmology (including the very early universe), and the standard model of elementary particles and forces. May not be applied toward the B.S. degree in Physics without prior written approval of the department. May apply toward the Level II Core Curriculum requirement in science.

1213 The Fringes of Science
(3-0) 3 hours credit.
This course examines the relationship between science and pseudo-science. It is intended to equip the student with the critical-thinking skills needed to distinguish between solid science and claims often promoted as scientific. Classes are a combination of lectures, readings from the history and philosophy of science, class discussion, etc. Topics discussed may include astrology, black holes, parapsychology, quantum physics, UFOs, homeopathy and other alternative therapies.

1603 Algebra-based Physics I [TCCN: PHYS 1301.]
(3-0) 3 hours credit. Prerequisite: MAT 1023 or MAT 1073 completed with a grade of "C–" or better.
The first of a two-part, algebra-based introduction to physics for biology and other majors that do not require calculus-based physics. Topics include mechanics, thermodynamics, vibrations and waves. Concurrent enrollment in PHY 1611 is recommended. May apply toward the Level II Core Curriculum requirement in science.

1611 Algebra-based Physics I Laboratory [TCCN: PHYS 1101.]
(1-4) 1 hour credit. Prerequisite: Completion of or concurrent enrollment in PHY 1603.
Laboratory accompanies PHY 1603; uses modern data acquisition and analysis tools to study the classic physics experiments that underlie the concepts discussed in PHY 1603.

1623 Algebra-based Physics II [TCCN: PHYS 1302.]
(3-0) 3 hours credit. Prerequisite: PHY 1603 completed with a grade of "C–" or better.
The second of a two-part, algebra-based introduction to physics for biology and other majors that do not require calculus-based physics. Topics include electricity, magnetism, optics, relativity, and quantum physics. Concurrent enrollment in PHY 1631 is recommended. May apply toward the Level II Core Curriculum requirement in science.

1631 Algebra-based Physics II Laboratory [TCCN: PHYS 1102.]
(1-4) 1 hour credit. Prerequisites: PHY 1611 completed with a grade of "C–" or better and completion of or concurrent enrollment in PHY 1623.
Laboratory accompanies PHY 1623; uses modern data acquisition and analysis tools to study the classic physics experiments that underlie the concepts discussed in PHY 1623.

1903 Engineering Physics I [TCCN: PHYS 2325.]
(3-0) 3 hours credit. Prerequisites: MAT 1214 completed with a grade of "C–" or better and completion of or concurrent enrollment in MAT 1224.
The first of a two-part, calculus-based introduction to classical physics. Topics include mechanics, relativity, gravitation, oscillations and waves, and fluids. Concurrent enrollment in PHY 1911 is recommended. May apply toward the Level II Core Curriculum requirement in science. (Formerly PHY 1904. Same as PHY 1943. Credit cannot be earned for more than one of the following: PHY 1903, PHY 1904, or PHY 1943.)

1911 Engineering Physics I Laboratory [TCCN: PHYS 2125.]
(1-4) 1 hour credit. Prerequisite: Completion of, with a grade of "C–" or better, or concurrent enrollment in PHY 1903.
Laboratory to accompany PHY 1903; uses modern data acquisition and analysis tools to study the classic physics experiments that underlie the concepts discussed in PHY 1903. (Credit cannot be earned for both PHY 1911 and PHY 1951.)

1923 Engineering Physics II [TCCN: PHYS 2326.]
(3-0) 3 hours credit. Prerequisites: PHY 1903 and completion of MAT 1224 with a grade of "C–" or better.
The second of a two-part, calculus-based introduction to classical physics. Topics include electricity and magnetism, basic circuits, electromagnetic waves, Maxwell equations, and optics. Concurrent enrollment in PHY 1931 is recommended. May apply toward the Level II Core Curriculum requirement in science. (Formerly PHY 1924. Same as PHY 1963. Credit cannot be earned for more than one of the following: PHY 1923, PHY 1924, or PHY 1963.)

1931 Engineering Physics II Laboratory [TCCN: PHYS 2126.]
(1-4) 1 hour credit. Prerequisites: Completion of PHY 1911 with a grade of "C–" or better and completion of or concurrent enrollment in PHY 1923.
Laboratory to accompany PHY 1923; uses modern data acquisition and analysis tools to study the classic physics experiments that underlie the concepts discussed in PHY 1923. (Credit cannot be earned for both PHY 1931 and PHY 1971.)

1943 Physics for Scientists I [TCCN: PHYS 2325.]
(3-1) 3 hours credit. Prerequisites: MAT 1193 or MAT 1214 completed with a grade of "C–" or better; completion of or concurrent enrollment in MAT 1224 (if student took MAT 1214) or STA 1403 (if student took MAT 1193) is required.
The first of a two-part, calculus-based introduction to classical physics, designed for physical sciences and mathematics majors. Topics include mechanics and Newton's laws, conservation laws, gravitation, rotational motion and rigid bodies, oscillations and waves. Concurrent enrollment in PHY 1951 is recommended. Classes meet weekly for three hours of lecture and one hour of recitation. May apply toward the Level II Core Curriculum requirement in science. (Formerly PHY 1904. Same as PHY 1903. Credit cannot be earned for more than one of the following: PHY 1903, PHY 1904, or PHY 1943.)

1951 Physics for Scientists I Laboratory
(1-4) 1 hour credit. Prerequisite: Completion of, with a grade of "C–" or better, or concurrent enrollment in PHY 1943.
Laboratory to accompany PHY 1943; uses modern data acquisition and analysis tools to study the classic physics experiments that underlie the concepts discussed in PHY 1943. (Credit cannot be earned for both PHY 1951 and PHY 1911.)

1963 Physics for Scientists II [TCCN: PHYS 2326.]
(3-1) 3 hours credit. Prerequisites: PHY 1943 and MAT 1224 (or MAT 1193 and STA 1403) completed with grades of "C–" or better.
The second of a two-part, calculus-based introduction to classical physics, designed for physical sciences and mathematics majors. Topics include an introduction to thermal physics, electricity and magnetism, fundamentals of circuits, electromagnetic induction, AC circuits, electromagnetic waves, and Maxwell's equations. Concurrent enrollment in PHY 1971 is recommended. Classes meet weekly for three hours of lecture and one hour of recitation. May apply toward the Level II Core Curriculum requirement in science. (Formerly PHY 1924. Same as PHY 1923. Credit cannot be earned for more than one of the following: PHY 1923, PHY 1924, or PHY 1963.)

1971 Physics for Scientists II Laboratory
(1-4) 1 hour credit. Prerequisites: PHY 1951 completed with a grade of "C–" or better and completion of or concurrent enrollment in PHY 1963.
Laboratory to accompany PHY 1963; uses modern data acquisition and analysis tools to study the classic physics experiments that underlie the concepts discussed in PHY 1963. (Credit cannot be earned for both PHY 1971 and PHY 1931.)

2103 Modern Physics
(3-0) 3 hours credit. Prerequisites: PHY 1963, MAT 2214 (completed with a grade of "C–" or better), and completion of or concurrent enrollment in PHY 3203, or consent of instructor.
Topics include special relativity, Planck's Radiation Law, elements of quantum mechanics, atomic and molecular structures, spectra, the atomic nucleus, nuclear reactions, and an introduction to elementary particles. (Formerly PHY 3103. Credit cannot be earned for both PHY 2103 and PHY 3103.)

2111 Modern Physics Laboratory
(1-4) 1 hour credit. Prerequisites: PHY 1963, PHY 1971, and completion of, with a grade of "C–" or better, or concurrent enrollment in PHY 2103.
Laboratory to accompany PHY 2103; Uses modern data acquisition and analysis tools to study the classic physics experiments that underlie the concepts discussed in PHY 2103.

2823 Mathematical Physics I
(3-0) 3 hours credit. Prerequisites: MAT 2214 and PHY 1963, or consent of instructor.
Topics may include vector analysis, introduction to complex variables, Fourier series, ordinary differential equations, linear algebra, and selected application to problems in mechanics and electromagnetic theory. (Formerly PHY 3823. Credit cannot be earned for both PHY 2823 and PHY 3823.)

3003 Current Research Topics in Physics
(3-0) 3 hours credit. Prerequisites: PHY 1623 and PHY 1631, PHY 1923 and PHY 1931, or PHY 1963 and PHY 1971, completed with a grade or "C–" or better.
This course provides students the opportunity to acquire knowledge in contemporary physics through the study and class discussions of selected topics and recent articles. Subjects may include one or more of the following: special and general relativity, elements of quantum mechanics, atomic and molecular physics, solid state, biophysics, nuclear physics, introduction to elementary particles, astrophysics and cosmology, etc. May not be applied toward the B.S. or B.A. degree in Physics without prior written approval of the department.

3143 Introduction to Computational Physics
(3-0) 3 hours credit. Prerequisites: PHY 2103, PHY 2823, and PHY 3203, or consent of instructor.
This course introduces the computer techniques used to solve (and improve the understanding of) physical problems that may be intractable by the standard "pencil and paper" analytical approach. Topics may include numerical solution of differential equations, numerical integration, eigenvalue problems, use of computer algebra systems such as Mathematica or Maple, Monte Carlo methods, computer visualization of physical problems, etc. Examples are taken from classical and quantum mechanics, electrodynamics, statistical mechanics, and solid state physics. May be applied toward a B.S. degree in Physics with approval of the physics advisor. (Formerly titled "Computer Visualization of Physics.")

3203 Classical Mechanics I
(3-0) 3 hours credit. Prerequisites: PHY 1963 and completion of, with a grade of "C–" or better, or concurrent enrollment in PHY 2823, or consent of instructor.
Topics include Newtonian mechanics, oscillations, central-force motion, gravitation, Hamiltonian and Lagrangian dynamics.

3293 Thermal Physics
(3-0) 3 hours credit. Prerequisites: PHY 1963 and PHY 2823, or consent of instructor.
Topics include fundamentals of thermodynamics: entropy, free energy, phase transitions, and thermodynamic potentials; equilibrium, Maxwell-Boltzmann, Bose-Einstein, and Fermi-Dirac distribution functions; derivation of macroscopic equilibrium thermodynamics from statistical mechanics.

3313 Materials Physics
(3-0) 3 hours credit. Prerequisite: PHY 2103 or consent of instructor.
Topics covered include crystal structure and band theory, density functional theory, a survey of properties of metals and semiconductors, phonons, electron-phonon interaction and superconductivity. (Formerly titled "Solid State Physics.")

3343 Advanced Physics Laboratory
(0-6) 3 hours credit. Prerequisites: PHY 1971, PHY 2103 and PHY 2111.
This course provides students majoring in physics the opportunity to acquire knowledge in advanced experimental techniques gained through actual participation in real-world physics research labs.

3423 Electricity and Magnetism
(3-0) 3 hours credit. Prerequisites: PHY 1963, PHY 2823, and completion of (with a grade of "C–" or better) or concurrent enrollment in MAT 3613, or consent of instructor.
Topics include vector calculus, electrostatics, magnetostatics, Faraday's Law, and solutions to Laplace's equation.

3443 Modern Optics
(3-0) 3 hours credit. Prerequisite: PHY 3423 or consent of instructor.
Topics include reflection, refraction, absorption, polarization, and diffraction of light, filters, lasers, nonlinear properties, and Fourier optics.

3453 Lasers: Theory and Applications
(3-0) 3 hours credit. Prerequisite: PHY 2103 or consent of instructor.
Topics include basic principles and designs of lasers: Einstein A and B coefficients; semiclassical laser theory; the phase-coherent nature of the stimulated emission process; and laser efficiency. Various applications of lasers, such as laser-induced fluorescence, light wave communications, holography, surgery, and laser fusion.

3513 Electrodynamics
(3-0) 3 hours credit. Prerequisites: PHY 2823 and PHY 3423, or consent of instructor.
Continuation of the material started in PHY 3423. Topics include Maxwell's equations, electromagnetic waves, wave guides, and radiation from accelerated charges.

3583 Mathematical Physics II
(3-0) 3 hours credit. Prerequisite: PHY 2823 or consent of instructor.
Topics may include series solutions of differential equations, partial differential equations of physics, special functions, integral transforms and introduction to tensor calculus. Applications may include topics in classical and quantum mechanics, electrostatics and electrodynamics. (Formerly PHY 4823. Credit cannot be earned for both PHY 3583 and PHY 4823.)

3603 Cosmology
(3-0) 3 hours credit. Prerequisites: PHY 1963 and PHY 2103, or consent of instructor.
This course is an introduction to physical cosmology. Topics include large-scale structure, expansion and age of the universe; non-Euclidean spaces, big bang cosmology, baryogenesis, nucleosynthesis, and cosmic microwave background radiation; particle physics and inflationary cosmology. (Formerly PHY 4033. Credit cannot be earned for both PHY 3603 and PHY 4033.)

4013 Relativity: Special and General
(3-0) 3 hours credit. Prerequisites: PHY 2823 and PHY 3203, or consent of instructor.
Topics include special relativity: Lorentz transformations, four-vectors, geometry of flat space-time, relativistic dynamics. General relativity: Principle of equivalence, introduction to tensor calculus, Einstein's field equations, Schwarzschild's solution, black holes. Introduction to cosmology.

4133 Numerical Methods for Physicists
(3-0) 3 hours credit. Prerequisites: MAT 3613 and PHY 1963, or consent of instructor.
Topics may include numerical simulation of constrained and unconstrained rigid-body systems that are modeled according to physical laws; numerical solution to stiff systems of differential equations; use of automatic differentiation to compute Jacobian matrices associated with complex stiff systems.

4203 Classical Mechanics II
(3-0) 3 hours credit. Prerequisite: PHY 3203 or consent of instructor.
Topics include nonlinear oscillations and chaos, systems of particles and collisions, non-inertial frames, rigid bodies, coupled oscillations, continuous systems and waves.

4233 Environmental Physics
(3-0) 3 hours credit. Prerequisite: PHY 2103 or consent of instructor.
The essentials of environmental physics: global climate, energy for human use, pollutants, noise, environmental spectroscopy, and LIDAR. (Formerly PHY 3233. Credit cannot be earned for both PHY 4233 and PHY 3233.)

4263 Quantum Mechanics I
(3-0) 3 hours credit. Prerequisites: PHY 2103, PHY 3203, MAT 2233, and completion of or concurrent enrollment in PHY 3583, or consent of instructor.
Topics include the time-independent Schrodinger equation; operator methods, and the postulates of quantum mechanics; one-dimensional potentials; quantum harmonic oscillator; angular momentum and spin; entanglement and its applications; quantum mechanics in three dimensions and the hydrogen atom.

4423 Quantum Mechanics II
(3-0) 3 hours credit. Prerequisite: PHY 3583 and PHY 4263, or consent of instructor.
Topics include identical particles; time-independent perturbation theory; WKB approximation, time-dependent perturbation theory, the variational principle; the adiabatic approximation and Berry's phase; scattering.

4563 Biophotonics
(3-0) 3 hours credit. Prerequisite: PHY 3443 or consent of instructor.
Topics including basic concepts of optical radiation interacting with biological materials will be covered. Discussion of how the unique properties of photons are exploited to understand the biological structure and its function. Photon absorption and emission in biological materials will be considered to explain their applications, including optical imaging as a noninvasive diagnosis tool, photodynamic therapy (PDT), etc.

4603 Crystallography and Materials Characterization
(3-0) 3 hours credit. Prerequisite: PHY 2103 or consent of instructor.
This course will describe the basics of crystal description and will discuss the characterization methods such as x-ray electron and neutron diffraction.

4623 Nanotechnology
(3-0) 3 hours credit. Prerequisite: PHY 2103 or consent of instructor.
This course will describe the fundamentals of nanotechnology, including properties of matter at the nanometric size.

4653 Introduction to Micro and Nanotechnology
(3-0) 3 hours credit. Prerequisite: PHY 3423 or consent of instructor.
Survey of micro and nanofabrication techniques, scaling laws, mechanical, optical, electrical, magnetic and thermal transducers, microfluidic applications, and nanostructures. Structures produced in the laboratory include microactuators, nanoparticles and microfluidics. This course differs from PHY 4623 in that it is oriented more toward fabrication techniques, rather than fundamentals. (Credit cannot be earned for both PHY 4653 and EE 4523.)

4703 Renewable Energy: Solar Energy Convertors
(3-0) 3 hours credit. Prerequisite: PHY 2103 or consent of instructor.
Topics include physics of photovoltaic cells, semiconductors, solar energy convertors, thin film solar cells, nanostructures for solar energy conversion, dye-sensitized photovoltaic cells, fuels from water and sunlight, strategies for high efficiency.

4833 Molecular Biophysics
(3-0) 3 hours credit. Prerequisite: PHY 2103 or consent of instructor.
Topics include interaction between molecules, principles of thermodynamics (enthalpy, entropy, free energy) applied to biomolecules, Brownian motion and diffusion of molecules, structure of proteins, and principles of quantum mechanics. Biophysical techniques: absorption spectroscopy, transient absorption, fluorescence spectroscopy, fluorescence lifetime, FTIR spectroscopy, linear and circular dichroism, x-ray crystallography, and atomic force microscopy.

4843 Condensed Matter Theory
(3-0) 3 hours credit. Prerequisites: PHY 3313 and PHY 4263, or consent of instructor.
This course offers an introduction to the basic concepts of the quantum condensed matter theory, such as lattice dynamics, elementary excitations, linear response theory, symmetry breaking in Fermi and Bose systems: the physics of superconductivity and superfluidity.

4911-3 Independent Study
1 to 3 hours credit. Prerequisite: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree in physics.

4953 Special Studies in Physics
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4983 Unifying Concepts in Physics
(3-0) 3 hours credit. Prerequisites: PHY 3293, PHY 3513, PHY 4263, and completion with a grade of "C–" or better or concurrent enrollment in PHY 3583, or consent of instructor.
This advanced course is designed to help the students develop a more mature and coherent understanding of the whole discipline through an in-depth exploration of the major branches of physics and their theoretical interconnections.

4993 Honors Research
3 hours credit. Prerequisites: Enrollment limited to candidates for College Honors during their last two semesters; approval by the College Honors Committee.
Supervised research and preparation of an honors thesis. May be repeated once with approval.

Political Science (POL)

Department of Political Science and Geography, College of Liberal and Fine Arts

1013 Introduction to American Politics [TCCN: GOVT 2301.]
(3-0) 3 hours credit.
A broad survey of the basic elements of American and Texas politics. Attention is given to the normative and Constitutional foundations of the political culture, the development of major governmental institutions, political organizations and processes, and major policy outputs.

1133 Texas Politics and Society [TCCN: GOVT 2306.]
(3-0) 3 hours credit.
Topics may include discussions of the Texas and U.S. Constitutions; the role of state in the federal system; the diverse demographic, economic, and cultural bases of state politics; elections, interest groups, and elites; and legislative, executive, judicial, urban, and county politics.

1213 Topics in Texas and American Politics [TCCN: GOVT 2302.]
(3-0) 3 hours credit.
An examination of a selection of specific topics or set of issues in Texas and American politics that the U.S. or state constitutions affect. May be repeated for credit when topics vary, not to exceed 9 semester credit hours.

Topics may include:

The Politics of the American Economy
Theory and practice of classical and modern political economy. Historical interaction between American capitalism and political structures, processes, and public policy. Topics may include current fiscal, monetary, and other regulatory policies in economic context.

Ethics in America
This topic examines some of the central ethical theories throughout history, including virtue-based ethics, rights-based ethics, utilitarianism, and feminist ethics. Particular attention will be paid to the application of ethical theories to contemporary topics such as environmentalism, animal rights, abortion, affirmative action and biotechnology. Writers examined may include Plato, Immanuel Kant, John Stuart Mill, Carol Gilligan, and Peter Singer.

The United States in the World
The development of conceptions of the United States' role in the world. The foreign policy decision-making process and its legal and constitutional basis. The relationship of domestic politics to the conduct of foreign policy.

Texas and American Government in Comparative Perspectives
An examination of Texas and American political systems through comparison with other systems around the world. Focus is on comparative strengths and vulnerabilities, stability of political institutions, protection of rights, political participation, and public policy. Specific study of the Constitution, the concept of federalism, branches of government, political culture, public opinion and mass media, political parties and interest groups, the value of voting, civil rights and civil liberties, and the policy process.

States, Communities, and Public Policy
This course presents basic state and local political structures and processes, placing Texas in a broader comparative framework. Its principal emphasis is on the social and economic policies involving both federal and state or local components.

Civil Rights
This course explores the politics of civil rights in the United States and Texas, giving special attention to the federal and state constitutions. The course includes theoretical, empirical, legal, and historical analyses and examines civil rights in general with special emphasis on Latinos, African Americans, and women.

2503 Introduction to Political Theory
(3-0) 3 hours credit. Prerequisite: POL 1013.
The fundamental concepts and problems of politics as viewed by the classical political philosophers and contemporary theorists: justice, power, authority, obligation, freedom, and equality.

2513 Public Administration and Public Policy
(3-0) 3 hours credit. Prerequisite: POL 1013.
The role of bureaucratic agencies in the formulation and implementation of public policy. Organization theory and administration in the public sector. While the approach of the course is comparative, special emphasis is placed on bureaucracy in the United States.

2533 Introduction to Political Science [TCCN: GOVT 2304.]
(3-0) 3 hours credit. Prerequisite: POL 1013.
An introduction to the discipline of political science, with particular emphasis devoted to its development from 1880 to the present. Topics may include types of political institutions, uses of political science, participation by political scientists in public affairs or public policy, and career options available to political science majors.

2603 International Politics
(3-0) 3 hours credit. Prerequisite: POL 1013.
The major issues of North-South and East-West conflicts will be explored: international aid and trade transnational enterprises; economic development and debt; military conflicts and nuclear weapons; and the new frontiers of oceanic resources, tropical forests, and outer space.

2623 Law and Society
(3-0) 3 hours credit. Prerequisite: POL 1013.
An examination of the nature of law, its role in sociopolitical systems, and the institutional components of legal systems. Various theories and systems of law are examined. Possible topics can be drawn from general areas of legal study such as legal philosophy, critical legal studies, and comparative law, as well as from specific subject areas such as natural, constitutional, common, civil, customary, socialist, and theocratic law.

2633 Comparative Politics
(3-0) 3 hours credit. Prerequisite: POL 1013.
A comparative examination of the diverse forms, goals, styles, and practices of government in democratic and authoritarian states. Several major polities will be studied in detail.

2703 Scope and Methods in Political Science
(3-0) 3 hours credit. Prerequisite: POL 1013.
An introduction to methods of conducting and interpreting research in political science. Topics include principles of the philosophy of science; research designs, statistical concepts and techniques (conceptualization, operationalization, and measurement), and data-gathering procedures; data analysis; and qualitative methods. May also include standard computer packages and secondary data analysis.

3013 The American Legal Process
(3-0) 3 hours credit. Prerequisite: POL 1013.
An introduction to how the United States legal system is organized and functions. A broad overview of the system and its actors is combined with a focus on particular areas of the law such as domestic relations, personal injury liability litigation, criminal procedure, and alternative dispute resolution.

3023 Civil Liberties in American Law and Practice
(3-0) 3 hours credit. Prerequisite: POL 1013.
An analytical, normative, and empirical examination of civil liberties and rights in the United States. Topics may include freedom of speech, religion, and assembly, equal protection of the laws, due process, and privacy.

3033 International Governance
(3-0) 3 hours credit. Prerequisite: POL 1013.
International law, organizations, regimes, hierarchies, and norms such as sovereignty govern the international system. These factors help create a world order that limits armed conflict, regulates the world economy, advances environmental protection, and sets human rights standards. This course explains theories of international governance, and compares these perspectives to the analysis of political scientists on the past record and likely future of world order.

3043 Human Rights
(3-0) 3 hours credit. Prerequisite: POL 1013.
This course explores the philosophical and political meaning of fundamental human rights; cases of human rights violations (such as genocide in the Holocaust, Rwanda, Kosovo, and Cambodia; the death penalty; female genital mutilation; violations of workers' rights; and torture); and the role that states, international organizations and individuals can play in ending human rights abuses. Course readings may include contemporary theories of human rights and case studies on the enforcement of rights around the world.

3053 United States–Latin American Relations
(3-0) 3 hours credit. Prerequisite: POL 1013.
This course studies the evolution of relations between the United States of America and Latin America since 1824 to the present. It offers both the viewpoints of the U.S. government and Americans on Latin America and the viewpoints of Latin Americans on the government and people of the United States of America.

3063 Comparative Political Participation
(3-0) 3 hours credit. Prerequisite: POL 1013.
This course examines the citizen participation in the democratic process across industrialized democracies, including the United States. The course covers participation within mainstream channels of the democratic process, such as voting and campaign participation, and also participation in unconventional activities such as social movements and protests.

3073 African American Politics
(3-0) 3 hours credit. Prerequisite: POL 1013.
This course will examine African American political involvement in the American political system. It includes the political history of African Americans from the Civil War to the present day. Emphasis is placed on African American involvement at the national political level.

3083 Race and Ethnic Politics in the United States
(3-0) 3 hours credit. Prerequisite: POL 1013.
The role of ethnic and racial minorities in the politics of the United States; the responsiveness of existing political structures to ethnic problems; ethnic political organizations and influence.

3093 Mexican American Politics
(3-0) 3 hours credit. Prerequisite: POL 1013.
An opportunity to study Mexican American participation in the electoral process, political and economic institutions, labor organizations, and alternative modes of political action.

3103 Political Ideology
(3-0) 3 hours credit. Prerequisite: POL 1013.
This course is an examination of the political ideologies that shape contemporary political debate. Ideologies may include liberalism, libertarianism, socialism, communitarianism, neoconservatism, feminism, environmentalism, and critical race perspectives. Authors may include Marx, Mill, Rawls, Nozick, Sandel, MacKinnon, and others.

3113 American Political Theory
(3-0) 3 hours credit. Prerequisite: POL 1013.
The political theory of the Constitution, the Federalist Papers, Adams, Jefferson, Paine, Calhoun, Thoreau, Social Darwinism, Pragmatism, and 20th-century political thought.

3123 Political Psychology
(3-0) 3 hours credit. Prerequisite: POL 1013.
Political psychology seeks to explain the behavior of political leaders and mass publics by focusing on the psychological underpinnings of such behavior—their personalities, identities, values, attitudes, and feelings. Attention will be given to the interaction of these factors within different political environments. Topics may include political socialization; personality and political leadership; the psychology of small group decision making; the psychology of mass participation; and affect and cognition in political judgment.

3133 Political Philosophy: Ancient and Medieval
(3-0) 3 hours credit. Prerequisite: POL 1013.
The major works of Western political philosophy from ancient times to the Renaissance. Writers examined may include Plato, Aristotle, Thucydides, Augustine, and Machiavelli.

3143 Political Philosophy: Modern
(3-0) 3 hours credit. Prerequisite: POL 1013.
The major works of political philosophy from the Renaissance to the 19th century. Writers examined may include Hobbes, Locke, Rousseau, Hegel, Marx, and Mill.

3153 Political Philosophy: Contemporary
(3-0) 3 hours credit. Prerequisite: POL 1013.
Political thought from the late 19th century to the present. Topics examined may include contemporary Marxism and critical theory, analytic political theory, positivism and social science, phenomenological approaches, existentialism, and contemporary ethics.

3163 Introduction to Feminist Theory
(3-0) 3 hours credit. Prerequisite: POL 1013.
A reading-intensive, upper-level lecture course for political science majors and women's studies majors and minors, introducing students to feminist approaches to theory. Covers feminist critiques of some of the dominant traditions in Western political and social theory as well as ways in which women have begun to construct theories from their own distinctive perspectives within the intersecting hierarchies of race, class, and gender.

3183 Women in Politics
(3-0) 3 hours credit. Prerequisite: POL 1013.
An examination of the roles and forms of participation of women in contemporary American politics. Topics may include the fight for civil rights and equality; media portrayals of women in politics; women as candidates and as voters; women as elected officials, activists, and political professionals; and women in the military, including theories of gender and war.

3193 Theories of Citizenship
(3-0) 3 hours credit. Prerequisite: POL 1013.
A political philosophy approach to the concept of citizenship. The philosophical underpinnings of citizenship will be analyzed from a race, class, gender, and gay perspective. The notion of nation-states and their exclusive and arbitrary standards of what rights belong to people and to which people will be examined and at times challenged in the context of contemporary politics, American as well as global. In this examination the discussion will go beyond rights and into process. In other words, citizenship will be examined from a participatory, as well as rights, perspective.

3203 African American Political Thought
(3-0) 3 hours credit. Prerequisite: POL 1013.
This course examines diverse African American political thought spanning the history of the U.S. Political and social thought examined may include diverse writings from Booker T. Washington. W.E.B. Dubois, Marcus Garvey, Sojourner Truth, David Walker, Elijah Muhammad, Martin Luther King Jr., Malcolm X, Kimberlé Crenshaw, Angela Davis, Cornell West, Clarence Thomas, Lani Guinier, Patricia Williams, Louis Farrakhan, and Eldridge Cleaver.

3213 Business and Politics in the Third World
(3-0) 3 hours credit. Prerequisite: POL 1013.
Business-government relations in Third World nations at a time of deep policy changes initiated in the 1980s. Major theories of business-government relations and their explanatory validity for Third World nations. Particular emphasis may be given to Latin America and Asia and their dynamic emerging markets.

3223 Judicial Politics
(3-0) 3 hours credit. Prerequisite: POL 1013.
Political behavior of the major participants in the judicial process: judges, attorneys, juries, defendants, and litigants; the political and administrative context of the judicial process; judicial-executive and judicial-legislative relations; the impact of court decisions.

3234 Political Campaigns and Elections
(3-2) 4 hours credit. Prerequisite: POL 1013.
A study of the ways in which public officials are recruited and elected in the United States and other democracies. Campaign strategy and tactics; nominations and primaries; the legal framework of elections; the problem of constituency; voting studies; campaign finance. Three lecture and two laboratory hours per week. (Formerly POL 3233. Credit can be earned for both POL 3234 and POL 3233 with special permission.)

3244 Mass Media and Public Opinion
(3-2) 4 hours credit. Prerequisite: POL 1013.
Explores the acquisition of political attitudes, the role of the mass media in society and politics, and the relationship between political attitudes and values, the mass media, and public policy. (Formerly POL 3243. Credit cannot be earned for both POL 3244 and POL 3243.)

3253 Participation and American National Elections
(3-0) 3 hours credit. Prerequisite: POL 1013.
An introduction to fundamentals of American electoral politics. Topics will include psychological, sociological and economic models of participation, the presidential primary process, the effectiveness of presidential and congressional campaigns on the vote, psychological/sociological and economic models of the presidential and congressional vote, the incumbency advantage in congressional elections, spending in congressional elections, candidate entry, and comparison of House and Senate elections.

3273 Introduction to Global Analysis
(3-0) 3 hours credit. Prerequisite: POL 1013.
An overview of global conditions and events traditionally subject to analysis by American and international organizations, such as defense and security concerns, economic development, natural resources, human migration, terrorism, arms transfers and weapons proliferation, natural disasters, and international cooperation. Provides an overview of how government and private sector organizations respond and how they engage in defense, diplomacy, intelligence, etc. Discusses the role and operations of analytical functions in government and private organizations. May be taught from different perspectives depending upon faculty expertise and interests. (Same as GLA 3013. Credit cannot be earned for both POL 3273 and GLA 3013.)

3283 The American Presidency
(3-0) 3 hours credit. Prerequisite: POL 1013.
The U.S. president's role in the American political system. Topics may include the constitutional framework and historical development of presidential powers, presidential personality, and legislative, foreign policy, and war-making powers.

3293 Political Movements
(3-0) 3 hours credit. Prerequisite: POL 1013.
This course examines the origins, mobilizing tactics, and goals of political movements. Movements that may be investigated are the movements of labor, students, women, blacks, environmentalists, and others.

3303 Race, Ethnicity and Public Policy
(3-0) 3 hours credit. Prerequisite: POL 1013.
The objective of this course is to familiarize students with a range of discourses to understand the complexities of racial and ethnic inequalities in the United States as well as the history and current state of racial and ethnic politics. The course examines the politics and experiences of several groups, such as African Americans, Hispanics, American Indians, and Asian Americans. It also reviews the wide range of public policy issues as they affect, and are affected by, racial and ethnic considerations. (Formerly SSC 3253. Credit cannot be earned for both POL 3303 and SSC 3253.)

3323 Constitutional Law
(3-0) 3 hours credit. Prerequisite: POL 1013.
An examination of major constitutional issues, past and present, through the intensive study of leading cases. Recommended for pre-law students.

3353 Leadership and Elites
(3-0) 3 hours credit. Prerequisite: POL 1013.
An examination of national political executives in parliamentary and presidential democracies and in authoritarian states. Topics examined may include the selection process, decision making, leadership and bureaucracy, executive-legislative relations, and neocorporatism.

3363 Political Parties and Interest Groups
(3-0) 3 hours credit. Prerequisite: POL 1013.
An examination of the purpose of political parties in the political process. Interest groups and their roles in government and public policy.

3373 The Legislative Process
(3-0) 3 hours credit. Prerequisite: POL 1013.
An examination of the functions, structures, and politics of legislatures and their relationships to their constituencies and other branches of government.

3383 East European Politics
(3-0) 3 hours credit. Prerequisite: POL 1013.
This course provides an overview of politics in Eastern Europe broadly understood as the region of East Central and Southeastern Europe, and the post-Soviet space. It traces the evolution of nation building since the interwar period and the system of communist rule, with a focus on key dimensions of the post communist transformation of the region. Thematic coverage may include constitutions, political culture, party politics, and Euro-Atlantic integration.

3393 Latin American Politics
(3-0) 3 hours credit. Prerequisite: POL 1013.
An examination of political institutions and their relationship to social and economic change in Latin America. Profiles of major Latin American countries, such as Mexico, Brazil, Argentina, Peru, and Cuba.

3403 European Politics
(3-0) 3 hours credit. Prerequisite: POL 1013.
The interplay of politics with the changing social and economic environment in the advanced industrial societies of Western Europe. Elites, participation, governmental structures, party systems, interest groups, and public policy will be examined in several selected polities and the European Union.

3413 The Politics of Urban Development
(3-0) 3 hours credit. Prerequisite: POL 1013.
An opportunity to pursue a political-economic analysis of the metropolis, focusing on the problems and conflicts stemming from urban growth and stagnation. Topics examined may include uneven development, planning, industrial development policy, taxation, and intergovernmental rivalry. Case studies may be drawn from societies other than the United States.

3423 Geopolitics of Russia and Eurasia
(3-0) 3 hours credit. Prerequisite: POL 1013.
Multidisciplinary introduction and regional study of the Russian Federation and the Eurasian realm, including the Caucasus, Central Asian nations, Afghanistan, and Mongolia. Both the geography and the politics of this area will be analyzed. Historical and contemporary geopolitical topics include nation-building, regional civilizations, revolution, terrorism, the 19th-century "Great Game," the rise of the USSR, and the current transition of the Russian Federation to an uncertain future. (Same as GRG 3423. Credit cannot be earned for both POL 3423 and GRG 3423.)

3433 Governments and Politics of Southeast Asia
(3-0) 3 hours credit. Prerequisite: POL 1013.
A comparative examination of the political systems of selected Southeast Asian countries and their efforts to deal with political, economic, and social change. Countries studied may include Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam.

3443 Governments and Politics of East Asia
(3-0) 3 hours credit. Prerequisite: POL 1013.
A comparative examination of the political systems of selected East Asian countries and their efforts to deal with problems of political, economic, and social change. Countries studied may include the People's Republic of China, the Republic of China, and South Korea. (Formerly titled "Asian Politics"; credit cannot be earned for both.)

3453 The Politics of Mexico
(3-0) 3 hours credit. Prerequisite: POL 1013.
Background to the contemporary political system of Mexico, including independence, foreign intervention, the Diaz regime, and the 1910–1917 revolution. Other topics may include the constitution, the structure of government, political parties, the presidency, economic development and policy, contemporary leadership, and elites.

3463 Politics of the Third World
(3-0) 3 hours credit. Prerequisite: POL 1013.
The political system of various Third World nations. An inquiry into the political and economic problems of these countries, such as development, instability, and political change.

3473 Theories and Problems in Latin American Politics
(3-0) 3 hours credit. Prerequisites: POL 1013 and one of the following: POL 3393, POL 3453, HIS 2533; or consent of instructor.
Advanced survey of major theories and problems in Latin American political and economic development. Theories of dependency, corporatism, bureaucratic authoritarianism, and transitions of democracy. Selected problems such as political stability, land reform, economic integration, multinational corporations, inflation, foreign debt, revolution and reform, and the military in politics.

3483 International Political Economy
(3-0) 3 hours credit. Prerequisite: POL 1013.
This course is an introduction to the institutions and policies that govern international economic relations. Students will study the development of the international economic system as well as controversies over money, trade, and governance.

3493 Politics of the Middle East
(3-0) 3 hours credit. Prerequisite: POL 1013.
An examination of the past, present, and future of Middle East politics, with an emphasis on culture, politics, religion, and conflicts in the area; the international relations of Middle Eastern countries as well as superpowers' involvement.

3503 American Foreign Policy since World War II
(3-0) 3 hours credit. Prerequisite: POL 1013.
Major private interests and public institutions involved in American foreign policy making; public opinion and foreign involvement; specific policies toward international organizations and major world regions.

3513 International Organizations
(3-0) 3 hours credit. Prerequisite: POL 1013.
Major issues involving international organizations: nationalism and globalism, financing problems, international staffing, voting patterns, peace-keeping, and international conferences. Organizations examined include the United Nations system, regional development banks, alliance systems, cartels, and common markets.

3523 Force in International Politics
(3-0) 3 hours credit. Prerequisite: POL 1013.
An examination of modern research into the use of coercion in international relations, specifically economic sanctions, war, and terrorism. Special emphasis will be placed on the causes, trends, and consequences of interstate wars. Peace movements and the technologies of peace making will also be covered.

3553 Social Policy in Modern Welfare States
(3-0) 3 hours credit. Prerequisite: POL 1013.
History and development of social policies in modern societies. Policy areas covered may include pensions, health care, income maintenance, housing, education, training, and child care.

3563 Current Issues in World Politics
(3-0) 3 hours credit. Prerequisite: POL 1013.
An examination of the issues that divide the people of the world. The structure of contemporary world problems will be studied and possible strategies for the reduction of international conflict will be assessed. Topics may include nuclear proliferation, world hunger, revolution and intervention, transnational enterprises, competing ideologies of international relations, and global ecology. (Formerly POL 2083. Credit cannot be earned for both POL 3563 and POL 2083.)

3573 Politics of the Contemporary City
(3-0) 3 hours credit. Prerequisite: POL 1013.
An introduction to urban America from a multidisciplinary perspective. Attention is given to the economic, social, political, and environmental factors that have produced the physical form and institutional arrangements of the contemporary city; and problems and opportunities currently facing American cities. (Formerly SSC 3113. Credit cannot be earned for both POL 3573 and SSC 3113.)

3603 Public Policy Formulation and Implementation
(3-0) 3 hours credit. Prerequisite: POL 1013.
An analysis of public policy formulation and implementation in social and political contexts; the implications of the policy process for democracy. Problem areas may include energy, health, the environment, and the fiscal crisis.

3613 Public Budgeting and Taxation
(3-0) 3 hours credit. Prerequisite: POL 1013.
An examination of the process and politics of public budgeting and taxation, and of the bureaucratic behavior accompanying them.

3623 Public Policy Evaluation
(3-0) 3 hours credit. Prerequisite: POL 1013.
The process and politics of public policy evaluation. The methodology of program evaluation will be examined as well as the political problems associated with policy evaluation. Case studies of specific government programs will be examined.

3633 Political Economy
(3-0) 3 hours credit. Prerequisite: POL 1013.
The political, legal, and ethical context of modern commercial society is explored through the evolution of conceptions of the economy, the individual, and the state. Topics may include the institutional foundations of market societies, ethical and legal impact of business practices, comparisons of national economic policies, the interaction of modern government and economic activity, and the impact of markets on concepts of public and private life. (Formerly SSC 3303. Credit cannot be earned for both POL 3633 and SSC 3303.)

3703 Personnel Administration in the Public Sector
(3-0) 3 hours credit. Prerequisite: POL 1013.
A survey of personnel management in the public sector. Topics examined may include recruitment; civil service and patronage appointments; career development; personnel utilization; conflict of interest questions; employee organization and relations; and affirmative action.

3743 Film in Politics
(3-0) 3 hours credit. Prerequisite: POL 1013.
This course examines the role of film in the political process and in the broader political development of the United States and other countries. Students will study how American and international films operate as information, propaganda, and entertainment.

3753 Latino/a Politics
(3-0) 3 hours credit. Prerequisite: POL 1013.
This course examines political developments in Latino communities. Topics may include political history and organization, Latino naturalization, patterns of participation, political attitudes, and policy-making influence.

3763 Globalization
(3-0) 3 hours credit. Prerequisite: POL 1013.
This course examines normative and empirical issues in globalization debates, such as the role of states and non-state actors, the emergence of global civil society, patterns of international development, the influence of international integration on security, health, violence, and intercultural toleration, and the status of institutions for global justice. (Same as INS 3763. Credit cannot be earned for both POL 3763 and INS 3763.)

3783 Comparative Democratization
(3-0) 3 hours credit. Prerequisite: POL 1013.
This course examines theories of democratic transition and focuses on the problematics of democratic change throughout the world. Case studies may include political change after the end of the Cold War in the former Communist states, democratic transitions in Latin America, patterns of change in sub-Saharan Africa, the Middle East, and south Asia.

3813 Political Polling
(3-0) 3 hours credit. Prerequisite: POL 1013.
This course examines the principles, techniques and problems involved in conducting survey research. Emphasis is on applied quantitative and qualitative techniques of data collection and analysis commonly used by political scientists, polling organizations, and political consultants in measuring citizen orientations. Topics may include questionnaire design, sampling, interviewing techniques, coding and processing of data, analysis and interpretation of data, and survey research ethics.

3823 Politics of Congressional Elections
(3-0) 3 hours credit. Prerequisite: POL 1013.
An introduction to the politics of congressional elections. Topics include determinants of national election outcomes, campaigning for Congress, strategic behavior, primary elections, the incumbency advantage, money in congressional elections, Senate versus House comparisons, and representation.

4003 Comparative Foreign Policy
(3-0) 3 hours credit. Prerequisite: POL 1013 or consent of instructor.
This course is an in-depth comparative examination of the worldviews, institutional processes, political actors, and outcomes of foreign policy-making of several major nation-states. Themes that may be covered are comparative policies for international security, international governance, economic competition, humanitarian action, and regional crises such as the Middle East and African development.

4013 The Intelligence Community and World Affairs
(3-0) 3 hours credit. Prerequisite: POL 1013.
Discusses the historical and political developments of intelligence as a component of defense and security policy, mainly in the post-World War II era. Examines the legal foundations of the American national security and intelligence functions, including discussion of accountability and control measures. Emphasizes the role of intelligence in national security policy making, principally conducted by the Executive and Legislative branches in democratic societies. Discusses the main functions of intelligence. (Same as GLA 4013. Credit cannot be earned for both POL 4013 and GLA 4013.)

4023 Techniques in Global Analysis
(3-0) 3 hours credit. Prerequisite: POL 1013.
Examines various techniques for collecting, analyzing, and communicating information by government and private sector organizations engaged in global analysis. Stresses methodologies for analyzing informational inputs, including strengths and weaknesses of various analytical applications. Studies analytic cultures and pathologies associated with information collection and interpretation, legal and political oversight, accommodation of dissenting views in interpretation and policy debate, and economic, political, and cultural implications of analytical findings. Compares and contrasts analytical methods employed by public and private organizations. May be taught from different perspectives depending upon faculty expertise and interests. (Same as GLA 4123. Credit cannot be earned for both POL 4023 and GLA 4123.)

4103 Latin America and the World
(3-0) 3 hours credit. Prerequisites: POL 1013 and one of the following: POL 3393, POL 3453, POL 3473, HIS 2533; or consent of instructor.
Advanced study of the past, present, and future roles of Latin America in the world arena. An examination of relations between Latin America and other Third World nations, countries of the Pacific Basin, the United States, and Canada.

4123 Legal and Philosophical Reasoning
(3-0) 3 hours credit. Prerequisite: POL 1013.
An intensive analysis of selected philosophical texts focusing on law and justice. Students are challenged to develop critical reading and thinking skills by studying the texts of philosophers such as Plato, Aristotle, Dworkin, Hart, and/or others who outline difficult arguments and unfamiliar ideas. Emphasis is placed on drawing reasoned conclusions, advocating positions, and expressing oneself in oral and written forms. (Same as LGS 4123. Credit cannot be earned for both POL 4123 and LGS 4123.)

4143 The European Union
(3-0) 3 hours credit. Prerequisite: POL 1013, POL 2633, POL 3403, or consent of instructor.
This course focuses on the historical, political, and intellectual sources of the European Union, the evolution of its institutions, and the effectiveness of its system of governance. Emphasis will be placed on the influence of regional integration on politics and democracy within Europe. The course will consider the construction of united Europe in the context of relations between the EU and member states, European institutions and citizens, and the EU and the world system of politics.

4153 Seminar in Jurisprudence
(3-0) 3 hours credit. Prerequisite: POL 1013.
An analytic inquiry into the normative, empirical, and ideological underpinnings of law. The functions, nature, and utilities of law in various social and conceptual schemes. Alternatives to formal law and jural dispute settling.

4203 Current Topics in Global Analysis
(3-0) 3 hours credit. Prerequisite: POL 1013.
An organized course offering the opportunity for specialized study of topics in such areas as domestic security planning, politics of national defense budgets and products, terrorism, arms transfers and controls, natural disaster preparedness, peace making, nuclear weapons proliferation and negotiations, international trade agreements and policies, national security economics, and civil liberties controversies. (Same as GLA 4203. Credit cannot be earned for both POL 4203 and GLA 4203.)

4323 Administrative Law
(3-0) 3 hours credit. Prerequisite: POL 1013.
A survey of those aspects of public law of particular relevance to public administration, analyzing such problem areas as the delegation of authority; formal accountability; open records and confidentiality; and responsiveness to democratic value in decision making.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4923 Advanced Research Tutorial
3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor and the Department Chair.
The tutorial provides students with the opportunity to serve as an apprentice to a professor in order to learn the process of academic research. The student would engage in all aspects of the professor's research project, potentially including data collection, report writing, joint paper presentations or publications, providing ideal preparation for graduate school.

4933,6 Internship in Political Science
3 or 6 hours credit. Prerequisites: Consent of internship coordinator and Department Chair.
Supervised experience relevant to political science within selected community organizations. A maximum of 6 semester credit hours may be earned through the internship.

4953 Special Studies in Political Science
(3-0) 3 hours credit. Prerequisite: POL 1013.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4973 Seminar in Political Science
(3-0) 3 hours credit. Prerequisites: POL 1013, POL 2703, and 15 semester credit hours in POL, or consent of instructor.
The opportunity for an intensive study of a selected topic. Primary emphasis on supervised research on various aspects of the topic. May be repeated for credit when topics vary. Enrollment limited to juniors and seniors majoring in political science.

4983 Research Practicum
3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, and the Department Chair.
The practicum provides students with the opportunity to focus on a specific research issue having practical applications in geography, governance, politics, or policy. Students participate in a hands-on research experience on the issue in a collective research environment. Potential practicum activities could be related to the Social Research Lab, the Media & Elections Studio, and the GIS Lab, for example.

4993 Honors Thesis
3 hours credit. Prerequisites: Enrollment limited to candidates for Honors in Political Science during the last two semesters; completion of honors examination and consent of the Honors College.
Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval.

Psychology (PSY)

Department of Psychology, College of Liberal and Fine Arts

1013 Introduction to Psychology [TCCN: PSYC 2301.]
(3-0) 3 hours credit.
Introduction to the study of the mind and behavior, with attention to awareness, discrimination, sensation, perception, emotion, motivation, learning, memory, problem solving, personality, mental and behavioral development, abnormal behavior, and behavior in group settings. Psychological, social, cultural, and biological determinants of behavior are considered, together with applications of basic principles. Scientific and nonscientific approaches to the explanation of psychological phenomena are examined critically. Participation in illustrative research required. (Credit cannot be earned for both PSY 1013 and PSY 1203.)

2073 Statistics for Psychology
(3-0) 3 hours credit. Prerequisites: MAT 1023, MAT 1033, or MAT 1073; and one psychology course.
The use of statistics in psychological research includes: elementary probability theory; descriptive statistics, including histograms, graphing, and measures of central tendency and dispersion; correlational techniques; binomial and normal distributions; and inferential statistics, including hypothesis testing, effect size estimates, and analysis of variance. (Formerly STA 2073. Credit cannot be earned for both PSY 2073 and STA 2073.)

2503 Developmental Psychology [TCCN: PSYC 2314.]
(3-0) 3 hours credit. Prerequisite: PSY 1013.
Problems, methods, major theories, and results in the study of the psychological development of the individual from the prenatal period to old age.

2513 Abnormal Psychology
(3-0) 3 hours credit. Prerequisite: PSY 1013.
Topics may include the dynamics of abnormal behavior with attention to description, causes, and treatment of major psychological disorders, including neuroses, psychoses, personality disorders, and psychosomatic disorders.

2523 Personality [TCCN: PSYC 2316.]
(3-0) 3 hours credit. Prerequisite: PSY 1013.
Problems, methods, major theories, and results in the study of development and maintenance of typical modes of behavior and dynamics of adjustment.

2533 Social Psychology [TCCN: PSYC 2319.]
(3-0) 3 hours credit. Prerequisite: PSY 1013.
Problems, methods, major theories, and results in the study of social interaction and interpersonal influence; self-identity, attitudes, role behavior, social perception, social influence, and behavior within groups.

2543 Theories of Learning
(3-0) 3 hours credit. Prerequisites: PSY 1013 or equivalent; and MAT 1023 or equivalent.
An examination of major theories about the nature of the learning process. Discussion will focus on the construction and evaluation of models of learning. The practical and theoretical implications of research results for the acquisition, maintenance, modification, and elimination of behavior will be considered. Related memory phenomena and theories may be discussed.

2573 Psychology of Thought
(3-0) 3 hours credit. Prerequisites: PSY 1013 or equivalent; and MAT 1023 or equivalent.
An introduction to the principles of human thought as they relate to memory, comprehension, and problem solving. These principles will be used to analyze the nature of the cognitive strategies and skills that individuals develop to cope with the adaptive challenges they face.

3013 Psychological Measurement
(3-0) 3 hours credit. Prerequisite: PSY 3403 or the equivalent.
The application of quantitative and qualitative measures to psychological data.

3023 Social Psychology of Small Groups
(3-0) 3 hours credit. Prerequisites: PSY 2533 and PSY 3403; or consent of instructor.
Theory and modern research in the social psychology of small groups. Particular attention will be given to group formation, the nature of small group processes, and the influence of groups on behavior.

3053 Cross-Cultural Psychology
(3-0) 3 hours credit. Prerequisites: ANT 1013, ANT 2053, or PSY 1013; and PSY 3403 or the equivalent; or consent of instructor.
An examination of the role of culture in the development and validation of psychological theories. Critical discussion of the application of theories of human behavior developed in the United States and Western Europe to other cultural groups, including ethnic minority subgroups. Topics may include identity formation, cognitive and personality development, social and organizational behavior, intergroup relations, psychological assessment, and mental health.

3063 Psychological Testing
(3-0) 3 hours credit. Prerequisite: PSY 3403 or the equivalent.
An introduction to the development, interpretation, and administration of psychological tests.

3103 Cognition
(3-0) 3 hours credit. Prerequisites: PSY 2543 or PSY 2573; and PSY 3403.
Examination of current information-processing models of human cognition. Emphasis will be placed on the processes by which stimuli are identified, by which past information is retrieved and used, and by which one's knowledge is modified.

3113 Motivation and Emotion
(3-0) 3 hours credit. Prerequisite: PSY 3403 or the equivalent.
Topics may include examination of biological, physiological, learning, psychodynamic, cognitive, and purposive factors in the motivation of human behavior. Includes an examination of the nature and roles of emotion in explaining motivational processes.

3123 Attitudes
(3-0) 3 hours credit. Prerequisites: PSY 2533 or PSY 2543; and PSY 3403.
Examination of current theory and research on the nature of attitudes, their acquisition, and processes of attitude change. Topics may include psychological foundations of attitudes, structure and function of attitudes, attitude measurement, attitude-behavior consistency, theories of attitude change, and the role of attitudes in social behavior.

3153 Sensation and Perception
(3-0) 3 hours credit. Prerequisites: PSY 2543 or PSY 2573, and PSY 3403.
Survey of the processes by which the information available in the physical world is encoded and transformed to produce our perception of the world. Emphasis on the interaction between data-driven and conceptually-driven processes. Topics may include elementary sensory physiology, pattern recognition, illusions, physiological bases of perceptual dysfunction, and perceptual development. (Formerly PSY 2553. Credit cannot be earned for both PSY 3153 and PSY 2553.)

3203 Industrial and Organizational Psychology
(3-0) 3 hours credit. Prerequisites: PSY 2073 or the equivalent, and PSY 3403 or the equivalent, or consent of instructor.
The role of psychology in industry. Applications of psychological knowledge to industrial problems such as personnel selection, employee motivation and satisfaction, and the influence of organizations on behavior.

3303 Psychological Perspectives on Gender
(3-0) 3 hours credit. Prerequisites: PSY 2503, PSY 2513, PSY 2523, or PSY 2533; and PSY 3403 or the equivalent; or consent of instructor.
Consideration of physiological and social-learning origins of sex differences and psychological theories of sex-stereotyped and sexual behavior. Topics may include androgyny versus sex-typed behavior, gender dysfunction, origins of sex stereotypes, sexual preferences, and sex differences in reasoning ability, aggression, sexual behavior, personality, and psychopathology.

3403 Experimental Psychology
(3-0) 3 hours credit. Prerequisites: One course from PSY 2503, PSY 2513, PSY 2523, or PSY 2533; PSY 2543 or PSY 2573; a minimum grade of "C–" in PSY 2073 or consent of instructor; and concurrent enrollment in PSY 3413.
This course is designed to offer students the opportunity to familiarize themselves with representative experimental designs employed in psychological research, to provide instruction in the choice of appropriate designs, to provide the opportunity to develop skills in the analysis of published research, and to offer an introduction to techniques for collecting and analyzing data.

3413 Experimental Psychology Laboratory
(2-2) 3 hours credit. Prerequisite: Concurrent enrollment in PSY 3403.
Application of observational and experimental procedures to selected problems in the collection of psychological data and the evaluation of psychological theories.

3513 Developmental Psychopathology
(3-0) 3 hours credit. Prerequisites: PSY 2513 and PSY 3403; or consent of instructor.
Clinical findings and experimental research regarding childhood behavior problems, including hyperactivity, autism, schizophrenia, and anxiety disorders. Additional topics may include family influences on development of abnormal behavior and various psychotherapeutic techniques. (Formerly titled "Psychopathology and Childhood.")

3523 Psychology of Adulthood and Aging
(3-0) 3 hours credit. Prerequisites: PSY 2503 and PSY 3403; or consent of instructor.
Descriptive and theoretical accounts of psychological developments from early adulthood to old age. Relevant data are reviewed in the areas of memory, intellect, mental and physical health, social development, personality, grief, and dying.

3543 Introduction to Clinical Psychology
(3-0) 3 hours credit. Prerequisites: PSY 2513 and PSY 3403; or consent of instructor.
An introduction to the scientist-practitioner viewpoint of clinical psychology. The basic tools of psychological assessment, psychodiagnosis, and psychotherapy will be addressed.

4003 History of Psychology
(3-0) 3 hours credit. Prerequisite: PSY 3403 or consent of instructor.
The development of major theoretical positions and research strategies in psychology from the ancient Greeks to the present, with emphasis on the development of scientific psychology since the late 19th century.

4013 Social Psychology of the Self
(3-0) 3 hours credit. Prerequisites: PSY 2523 or PSY 2533; and PSY 3403; or consent of instructor.
A social psychological examination of current research on the self in social interaction. Topics may include the structure of the self-concept and strategies for the preservation of self-esteem; the evaluation of the self through social comparison; the search for meaning and processes involved in understanding the self; and individual differences in self-knowledge and self-presentational styles. (Formerly PSY 3143. Credit cannot be earned for both PSY 4013 and PSY 3143.)

4103 Social Psychology of Prejudice
(3-0) 3 hours credit. Prerequisites: PSY 2533 and PSY 3403.
Consideration of social, psychological, and personality factors in prejudice and stereotyping, and their interaction with cultural factors in producing racism and other prejudices.

4113 Cognitive Development
(3-0) 3 hours credit. Prerequisites: PSY 2503 or PSY 2573; and PSY 3403; or consent of instructor.
The development of perception, memory, and thinking in children, with attention to the roles of experience and maturation in development of thought, and the validity of the concept of cognitive stages, particularly Piagetian models.

4133 Social and Personality Development
(3-0) 3 hours credit. Prerequisites: PSY 2503, PSY 2523, or PSY 2533; and PSY 3403 or the equivalent; or consent of instructor.
Social and personality development across the life span. Topics may include sex-role development, child rearing, achievement, and the influence of peers. Socialization into different social roles may also be considered.

4143 Memory
(3-0) 3 hours credit. Prerequisites: PSY 2543 or PSY 2573; and PSY 3403 or the equivalent; or consent of instructor.
Models for the coding, storage, and retrieval of information in memory. Organization and structure of short-term, long-term, and semantic memory, and the role of verbalization and images in memory.

4163 Sensory Processes
(3-0) 3 hours credit. Prerequisite: PSY 3153 or consent of instructor.
Study of sensory physiology and the four psychophysical questions: detection, discrimination, magnitude estimation, and recognition.

4183 Physiological Psychology
(3-0) 3 hours credit. Prerequisite: PSY 3403 or consent of instructor.
Topics may include the biological and particularly neurophysiological bases of human behavior and cognition, the structure and organization of the nervous system, and the effect of the latter on perception, memory, learning, motivation, and emotion.

4193 Relationships
(3-0) 3 hours credit. Prerequisites: PSY 2533 or PSY 2543; and PSY 3403.
A consideration of the psychological processes that underlie the development and maintenance of social relationships. Emphasis on motivational and cognitive factors that mediate social interaction and communication. Special attention may be given to friendships, romantic relationships, successful marriages, and distressed relationships.

4213 Social Cognition
(3-0) 3 hours credit. Prerequisites: PSY 2533 or PSY 2573; and PSY 3403 or the equivalent; or consent of instructor.
The study of how people perceive and construe social events, social situations, and the behavior of other people. Some emphasis is also placed on how social and cultural forces affect personal perception processes.

4253 Psychology of Health
(3-0) 3 hours credit. Prerequisite: PSY 3403 or consent of instructor.
An examination of the interaction of psychological, social, and biological factors in physical illness. The symptoms/conditions covered may include stress, pain, diabetes, cardiovascular disease, HIV/AIDS, and obesity. The course is research-based but also likely to include prevention and/or treatment strategies for health promotion.

4293 Visual Information Processing
(3-0) 3 hours credit. Prerequisite: PSY 3153 or consent of instructor.
Focus on the acquisition, storage, and use of visual information. Topics will include visual pattern recognition, models of visual attention, analog representations in memory, and spatial cognition.

4323 Psychology of Language
(3-0) 3 hours credit. Prerequisites: PSY 2543 or PSY 2573, and PSY 3403.
Investigates how humans represent, produce, understand, and acquire language. Topics may include language processing, neurolinguistics, language acquisition, conversational interaction, language disorders, and reading development. (Formerly PSY 2583. Credit cannot be earned for both PSY 4323 and PSY 2583.)

4911,3 Independent Study
1 or 3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree. No more than 3 semester credit hours of independent study will apply to Psychology major or minor requirements.

4923 Current Topics in Psychology
(3-0) 3 hours credit. Prerequisites: PSY 1013 and PSY 3403.
Coverage of topics of current interest in the field of psychology. May be repeated once for credit when topics vary, but not more than 3 semester credit hours will apply to the major in Psychology.

4933,6 Internship in Psychology
3 or 6 hours credit. Prerequisite: Consent of internship coordinator before registration.
Supervised experience relevant to psychology within selected community organizations. A maximum of 6 semester credit hours may be earned through Internship in Psychology. Not more than 3 semester credit hours will apply to Psychology major or minor requirements. Must be taken on a credit/no-credit basis.

4953 Special Studies in Psychology
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Thesis
3 hours credit. Prerequisite: Enrollment limited to candidates for Honors in Psychology. Requirements for candidacy include the sponsorship of a faculty member and Psychology faculty approval of the student's project proposal.
Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval. Not more than 3 semester credit hours will apply to Psychology major requirements.

Public Administration (PAD)

Department of Public Administration, College of Public Policy

1113 Public Administration in American Society
(3-0) 3 hours credit.
This functions as the general introductory course in public administration. The management of government bureaucracies including organization, human resources, career systems, and financing is discussed. There is a discussion of the role of bureaucracies in modern society in the formulation and implementation of public policy.

2153 Methodological Tools in Public Administration
(3-0) 3 hours credit. Prerequisite: Any 3-semester-credit-hour Mathematics core course.
Overview of techniques of research design and statistical analysis, with emphasis on applications to planning and decision-making by public and nonprofit agencies. Topics include measurement, hypothesis development, sampling, descriptive and inferential statistics, and elementary multivariate methods. Includes introduction to computer-assisted data analysis.

3013 Introduction to Public Policy
(3-0) 3 hours credit.
The course introduces students to the different aspects of public policy in the U.S. political context. Topics may include agenda setting, policy formulation, implementation, analysis, and evaluation.

3023 Introduction to Urban Management and Policy
(3-0) 3 hours credit.
This course will introduce students to the basic concepts of the management of urban municipalities. Topics to be covered may include leadership in urban settings; organizational structure and change; delivery of urban services, particularly in a diverse urban environment. The course will also cover the process of policy formation, implementation, and evaluation in the municipal setting.

3033 Introduction to Nonprofit Agencies
(3-0) 3 hours credit.
This survey course introduces the nonprofit sector and core competencies required by nonprofit leaders. The role of nonprofit organizations in civil society frames the course, in particular, how the nonprofit sector is unique from the public and private sectors. The state of the sector, and fundamental principles and practices required by nonprofit managers are explored, including creating a nonprofit, basics of fundraising, marketing, volunteer management, program development, and evaluation. Group and individual projects, service learning, research conducted for specific nonprofit agencies, oral presentations, networking, and construction of a portfolio of nonprofit work experiences and deliverables may be utilized. (Same as NPO 3013. Credit cannot be earned for both PAD 3033 and NPO 3013.)

3043 Public and Nonprofit Financial Management
(3-0) 3 hours credit.
This course introduces students to the principles of financial management for public and nonprofit organizations. The public financial management component of the course will cover issues at the federal, state, and local levels of government. Topics will include budgeting, financial reporting, revenue streams, tax equity, stakeholder relations, and accountability.

3053 Urban Economic Development
(3-0) 3 hours credit.
This course examines the factors contributing to the economic growth or decline of U.S. cities or regions and the role of local government in shaping economic development policies and economic change. It reviews the impact of public sector incentives and the outcomes of public-private partnerships through case studies of a variety of urban areas.

3113 Managing Public and Nonprofit Organizations
(3-0) 3 hours credit.
This course focuses on understanding the nature and role of public and nonprofit organizations. The course explores strategies for preserving and maximizing the public value of public and nonprofit organizations through the analysis of ethics, human behavior and motivation, organizational diagnosis, and management decision making. The structure, processes, environments, and purpose of the public and nonprofit sectors, and how to maximize organizational performance, are emphasized.

3123 Strategic Planning in the Public and Nonprofit Sectors
(3-0) 3 hours credit.
This course introduces the basic concepts of strategic planning and management in public and nonprofit organizations. The course covers a variety of topics such as formulation of mission and vision statements, identification of organizational goals, analysis of external environment and organizational context, strategic issue analysis, strategy development, implementation, and control. Students learn some analytical tools such as SWOT. Case studies are utilized to help students develop critical skills in analyzing and solving strategic problems.

3133 Politics and Policies of San Antonio and South Texas
(3-0) 3 hours credit.
The San Antonio area has been shaped and built by an array of decisions, public and private. This course will examine the history and development of the area and the political, social, and economic forces that have defined the local policymaking process by city, county, and special purpose governments. Topics may include fiscal policy, public investment policies, urban revitalization, and transportation.

3143 Urban and Regional Planning
(3-0) 3 hours credit.
This course will explore the fundamental concepts of urban and regional planning, including various planning tools and social and political issues related to planning. A wide variety of topics will be covered, including physical planning, transportation, housing, land use, urban redevelopment, and historic preservation. The course will tackle planning both as a community process and a professional activity. The evolution of planning concepts within the framework of the American political structure will be addressed.

4853 Contemporary Issues in Public Administration (Senior Seminar)
(3-0) 3 hours credit. Prerequisite: Completion of at least 9 semester credit hours of Public Administration coursework.
This is the capstone course for the Bachelor of Public Administration degree and will involve a major writing assignment and/or presentation. Specific topics to be covered will vary by semester.

4911,3 Independent Study
1 or 3 hours credit. Prerequisite: Independent Study Course Form (available in the department or college advising center) signed by the instructor, the student's undergraduate advisor, Department Chair, and Dean of the College of Public Policy.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated once for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933 Internship in Public Administration
3 hours credit. Prerequisites: PAD 1113, PAD 2153, and either PAD 3023 or PAD 3033; consent of academic advisor and Internship Coordinator. Prior approval required.
Supervised experience in an administrative setting that provides the opportunity to integrate theory and practice in public or nonprofit-related agencies. May be repeated for credit in a subsequent semester when agency setting varies, but not more than 6 semester credit hours will apply to a bachelor's degree.

4953 Special Topics in Nonprofit Organizations
(3-0) 3 hours credit.
An organized course offering the opportunity for specialized study not normally or not often available as part of regular course offerings. Special Topics may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4963 Special Topics in Urban Management and Policy
(3-0) 3 hours credit.
An organized course offering the opportunity for specialized study not normally or not often available as part of regular course offerings. Special Topics may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Thesis
3 hours credit. Prerequisite: Enrollment limited to candidates for Honors in Public Administration during the last two semesters; completion of honors examination and approval by the honors program coordinator.
Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval.

Public Health (PUB)

Office of Undergraduate Studies

1113 Introduction to Public Health
(3-0) 3 hours credit.
Introduces students to the discipline of public health. It will cover a variety of disciplines to the basic tenets of public health. The course will provide a history of public health, an introduction to the five core disciplines (Epidemiology, Biostatistics, Environmental Health, Social and Behavioral Health, and Health Policy & Management). The course will also cover the role of public health in a global society. (Same as SOC 1043. Credit cannot be earned for both PUB 1113 and SOC 1043.)

2113 Data Management in Public Health
(3-0) 3 hours credit.
Study of the skills required to design, organize and implement a data management system in public health applications. It will cover an introduction to data preparation for statistical analysis, development of organizational tools, methods of data acquisition, data collection form design, principles of database development, quality control of data, and data security. Application of Microsoft® Access and SAS® software packages in data management will be presented. (Same as SOC 3543. Credit cannot be earned for both PUB 2113 and SOC 3543.)

3413 Behavioral Epidemiology
(3-0) 3 hours credit.
Provides the student with basic knowledge about epidemiological applications in a behavioral area. It covers behavioral and social environmental issues related to disease etiology, premature morbidity and mortality patterns. Provides an overview of the epidemiology of specific health-related behaviors, the relationships between these behaviors and health outcomes, and available evidence for the effectiveness and appropriateness of various approaches to modification of these behaviors. (Same as SOC 4083. Credit cannot be earned for both PUB 3413 and SOC 4083.)

3613 Etiology 1: Epidemiologic Methods to Investigate Outbreaks and New Epidemics
(3-0) 3 hours credit.
Utilizes case discussion seminars to appraise the investigative methods and research designs for studying disease outbreaks and new epidemics. Historical and current cases will include examples of disease outbreaks (e.g., food borne illness, hospital infections), emergence of new diseases, or epidemics related to specific exposures (e.g., natural disasters). Each case will evaluate the background of the problem, the investigative methods employed, the results, and the interventions taken to resolve the problem.

4613 Etiology 2: Epidemiologic Methods to Investigate Chronic Disease, Exposure, and Risk
(3-0) 3 hours credit.
Utilizes case discussion seminars to appraise the investigative methods and research designs for studying chronic disease, disease exposure, and ascertainment of risk. Cases will include current examples of chronic diseases or conditions affecting population health (e.g., cardiovascular disease, diabetes, and obesity), methods for ascertaining outcomes (e.g., death certificates), and measures of risk association (e.g., standardized mortality ratios and relative risk). Each case will evaluate the background of the problem, the investigative methods employed, the results, and the public policy and practice implications from the research.

4933 Public Health Internship
3 hours credit. Prerequisites: Senior standing and completed coursework requirements in Public Health Foundation.
Provides the opportunity for work experience in a private or public health-related agency. Opportunities are developed in consultation with faculty advisor and on-site coordinator. Internship must be approved in advance by the Internship Coordinator and the student's internship faculty advisor. Supervised full-or part-time off-campus work experience and training in health care management. A minimum of 150 hours of work experience is required. Individual conferences and written reports required. May be repeated for credit but not more than 6 hours of internship will apply to a bachelor's degree.

Reading (RDG)

Department of Interdisciplinary Learning and Teaching, College of Education and Human Development

0013 Reading Improvement
(3-0) 3 hours credit.
Practical instruction in strategies for improving reading of university-level materials. Strategies developed include determining word meanings; understanding main ideas and supporting details; identifying the writer's purpose, point of view, and intended meaning; analyzing relationships among ideas; using critical reasoning when reading; and study skills. Course does not count toward any degree at UTSA. May be repeated.

3513 Children's Literature–EC–6
(3-0) 3 hours credit.
Designed to familiarize students with children's books from diverse cultures that are appropriate for EC–grade 6. Topics will include: the contributions of children's books, criteria for selecting materials, the evaluation of individual books, a survey of the genres of children's literature, literary response, and the discussion of current issues in the field of children's literature. Restricted course; advisor code required for registration.

3523 Reading for Teachers–Grades 4–8
(3-0) 3 hours credit. Prerequisite: Must be admitted to the Teacher Certification Program.
An overview of the development of reading across the grades with an emphasis on grades 4 through 8. This course focuses on the reading process, techniques for developing oral and written language facility, word identification and comprehension of readers from various sociocultural backgrounds and with differing abilities, and classroom assessment of reading. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. Field experience required.

3533 Reading and Writing Across the Disciplines–Grades 4–8
(3-0) 3 hours credit. Prerequisite: RDG 3523. Concurrent enrollment in C&I 4533, C&I 4543, C&I 4553, and EDP 4203 in semester prior to student teaching for Grades 4–8 LA/RDG/SS certification. Concurrent enrollment in C&I 4533 for Grades 4–8 ESL certification. Must be admitted to the Teacher Certification Program.
Study of the teaching and learning of content area reading in grades 4 through 8 including the textual, contextual, and cultural factors that influence reading. The course considers the range of reading abilities of intermediate and middle grade students, texts used in these grade levels, and strategies for teaching and evaluating vocabulary, comprehension, and thinking skills in the content areas. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. Field experience required. (Formerly titled "Content Area Reading-Grades 4–8.")

3633 Literature and Other Texts Across the Content Areas–Grades 4–8
(3-0) 3 hours credit.
This course is designed to familiarize students with literature and other texts appropriate for students in grades 4 through 8. These texts include trade books, informational books, electronic texts, and other real-world texts that are appropriate for teaching and learning. Topics will include: examination of critical issues in children's books and young adult literature, evaluation and selection of texts, and literary response. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. Field experience required.

3673 Reading for Secondary Teachers–Grades 8–12
(3-0) 3 hours credit.
An overview of the developmental nature of reading across the grades with an emphasis on grades 8 through 12. This course focuses on the reading process, including word identification, fluency, vocabulary, higher-order levels of comprehension, and metacognition. This course considers social and cultural factors that influence the adolescent reading processes, including the role of social interaction in reading, language variations, and background knowledge that are a part of the reading process. Other topics include differences in student ability and motivation as well as new approaches to assessment. This course also explores literacy programs that fit the needs of diverse adolescents, especially programs that address the challenges of struggling secondary readers. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. Field experience required.

3773 Reading and Writing Across the Disciplines–Secondary
(3-0) 3 hours credit. Prerequisites: Completion of all requirements for admission to the Teacher Certification Program, including but not limited to satisfying the TSI requirement, and completing EDP 3203 and EDU 2103.
Study of the reading process and of materials and techniques for supporting reading and writing in the secondary school. Considers the range of reading ability of secondary students, texts used, and strategies for teaching vocabulary, and comprehension in different content areas. Directed field experiences in secondary school classrooms are required. Opportunities for cross-disciplinary applications. Restricted course; advisor code required for registration. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4626 Student Teaching: Grades 4–8. Field experience required. (Formerly titled "Introduction to Content Area Reading–Secondary.")

3803 Writing Development and Processes
(3-0) 3 hours credit. Prerequisite to Teacher Certification.
Examines the nature of written language and facets of the writing process. The course focuses on the developmental nature of writing, stages in the writing process, writing in different genres, writing in the content areas, writing to learn, writing in relation to other communication processes, the evaluation of writing, and the place of technology in writing. For EC–6 generalists, this course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4616 Student Teaching: Early Childhood–Grade 6 and C&I 4626 Student Teaching: Grades 4–8. Restricted course; advisor code required for registration.

3823 Reading Comprehension–EC–6
(2-2) 3 hours credit. Prerequisites: Admission to the Teacher Certification Program, ECE 3143, ECE 3313, and ECE 3603. Concurrent enrollment in C&I 4353, C&I 4403, and ECE 4203 is required. May not be taken concurrently with C&I 4303, ECE 4143, and RDG 4833.
Study of the reading comprehension process, including how textual, reader, psychological, contextual, and cultural factors affect understanding of text. Emphasis is placed on cognitive reading strategies for comprehending narrative and expository text. Emphasis is also placed on strategies for teaching and evaluating vocabulary, comprehension, and thinking skill in the content areas. This course must be completed with a grade of "B–" or better for students to enroll in Block C courses. For EC–6 generalists, this course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4616 Student Teaching: Early Childhood–Grade 6. Restricted course; advisor code required for registration. Field experience required. (Credit cannot be earned for both RDG 3823 and BBL 3823.)

4833 Organizing Reading Programs for Differentiated Instruction–EC–6
(2-2) 3 hours credit. Prerequisites: Admission to Teacher Certification Program, ECE 3143, ECE 3313, ECE 3603, RDG 3513, and RDG 3823. Concurrent enrollment in C&I 4303 and ECE 4143 is required.
Course is designed to familiarize students with a variety of reading programs and to implement differentiated reading instruction in individual, small group, and whole-class contexts. Students will learn to use and interpret assessment to gain a holistic view of students' strengths and areas of need to inform instruction. For EC–6 generalists, this course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4616 Student Teaching: Early Childhood–Grade 6. Restricted course; advisor code required for registration. Field experience required.

4913 Independent Study
3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Thesis
3 hours credit. Prerequisites: Enrollment limited to candidates for honors in the Department of Interdisciplinary Learning and Teaching during the last two semesters; consent of the Honors College.
Supervised research and preparation for an honors thesis. May be repeated once with advisor's approval.

Real Estate (RFD)

Department of Finance, College of Business

3523 Real Estate Law
(3-0) 3 hours credit. Prerequisite: BLW 3013 or the equivalent.
Legal environment of real property ownership and transfer and legal brokerage; estates in land; sales contracts; mortgage transactions; title conveyances; landlord and tenant; restrictions and zoning; eminent domain; federal, state, and local laws governing housing discrimination; and equal opportunity and community reinvestment. (Same as BLW 3523. Credit cannot be earned for both RFD 3523 and BLW 3523.)

3533 Principles of Construction for Real Estate Professionals
(3-0) 3 hours credit.
The principles of construction methods and management with application to sustainable real estate development and adaptive reuse, facility and property management, real estate brokerage and real estate lending. Topics include building code requirements, AIA forms, assembling and interpreting construction documents, construction materials and methods, LEED construction requirements, tenant improvements, construction cost estimating and project cost tracking, and construction project management.

3571 Real Estate Seminar
(1-0) 1 hour credit. Prerequisites: Enrollment as real estate major or minor and permission of instructor.
Weekly presentations of current topics in real estate. This seminar may be repeated one time for a total of two semester credit hours.

4303 Facility and Property Management Policies and Procedures
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MGT 3013.
The implementation of professional policies, standards, practices, and procedures for the leasing, operation and maintenance of facilities. Topics include the facility management profession, leasing, and the acquisition, installation, operation, maintenance and disposition of building systems, furniture and fixtures, and grounds and exterior elements. (Formerly MGT 4303. Credit cannot be earned for both MGT 4303 and RFD 4303.)

4313 Facility and Property Management Practices
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MGT 3013.
The application of management practices to the operation of facilities. Topics include the study of human and environmental factors, building safety, building audits, building technology, emergency preparedness, the use and changing uses of facilities, and continuous quality improvement. (Formerly MGT 4313. Credit cannot be earned for both MGT 4313 and RFD 4313.)

4733 Principles of Sustainable Real Estate Development
(3-0) 3 hours credit. Prerequisites: MGT 3003, FIN 3014, FIN 3433, and FIN 4713 or FIN 4723, or consent of instructor.
The examination of the principles involved in creating value through the real estate development process. Economic, regulatory, planning, sustainability, financing, management and disposition issues are considered in the marketing and financial analyses of development prospects. (Same as FIN 4733. Credit cannot be earned for both RFD 4733 and FIN 4733. Real Estate Finance and Development majors cannot take FIN 4733 to meet degree requirements.)

4763 Real Estate Marketing
(3-0) 3 hours credit. Prerequisites: MGT 3003 and MKT 3013.
Focuses on the processes involved in professionally marketing and selling real estate. Emphasis is on integrating the four elements of a marketing mix—promotion, place, product, and price—and showing how they are used within the real estate industry to create marketing strategies. (Same as MKT 4763. Credit cannot be earned for both RFD 4763 and MKT 4763. Real Estate Finance and Development majors cannot take MKT 4763 to meet degree requirements.)

4853 Real Estate Appraisal
(3-0) 3 hours credit. Prerequisites: MGT 3003, FIN 3014, and FIN 3433, their equivalents, or consent of instructor.
Functions and methods of property valuation, including comparable sales analysis, cost depreciation analysis, and income capitalization; residential and income property appraisal techniques and reporting. (Same as FIN 4853. Credit cannot be earned for both RFD 4853 and FIN 4853. Real Estate Finance and Development majors cannot take FIN 4853 to meet degree requirements.)

4903 Internship in Construction Management
3 hours credit. Prerequisites: MGT 3003; completion of 9 semester credit hours consisting of any combination; FIN 3014, and/or courses with a CSM or RFD prefix. May only be taken by students in the B.B.A. degree in Real Estate Finance and Development with a Minor in Construction Management, with permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms.
This internship, as a required course in the Construction Management minor, is limited to the business and financial aspects of construction and will allow students to gain valuable experience in the field. The internship facilitates an integrative experience through interaction with entrepreneurs and building development business owners. Students engage in research projects, examine relevant issues and problems that builders and developers confront, and have the opportunity to engage in managerial work experience. Internship may not be repeated. (Formerly FIN 4903. Credit cannot be earned for both RFD 4903 and FIN 4903.)

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: MGT 3003 and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4923 Internship in Real Estate
3 hours credit. Prerequisites: MGT 3003, declared major in Real Estate Finance and Development with 9 semester credit hours of real estate or finance courses, an overall 2.5 grade point average, and permission in writing from the instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms.
The internship provides students the opportunity for professional work experience in a real estate related enterprise in either a private business or a public agency. The scope of the internship is developed in consultation with the sponsoring organization, the faculty advisor and Department Chair. This internship may be repeated once (for a total of 6 semester credit hours) provided the internships are with different organizations. (Formerly FIN 4923.)

4951-3 Special Studies in Real Estate
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisites: MGT 3003 and consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

Russian (RUS)

Department of Modern Languages and Literatures, College of Liberal and Fine Arts

1014 Elementary Russian I [TCCN: RUSS 1411.]
(3-2) 4 hours credit.
Fundamentals of Russian offering the opportunity to develop speaking, listening, reading, and writing skills. Introduction to Russian culture.

1024 Elementary Russian II [TCCN: RUSS 1412.]
(3-2) 4 hours credit. Prerequisite: RUS 1014, the equivalent, an appropriate placement test score, or consent of instructor.
Fundamentals of Russian offering the opportunity to further develop speaking, listening, reading, and writing skills. Further exposure to Russian culture.

2013 Intermediate Russian I [TCCN: RUSS 2311.]
(3-1) 3 hours credit. Prerequisite: RUS 1024, the equivalent, an appropriate placement test score, or consent of instructor.
Continued opportunity to develop listening, speaking, reading, and writing skills. Continued exposure to Russian culture.

2023 Intermediate Russian II [TCCN: RUSS 2312.]
(3-1) 3 hours credit. Prerequisite: RUS 2013, the equivalent, an appropriate placement test score, or consent of instructor.
Continued opportunity to develop listening, speaking, reading, and writing skills. Continued exposure to Russian culture.

2333 Russian Literature in English Translation
(3-0) 3 hours credit.
Major works of Russian literature across time, genres, and movements. (Formerly RUS 3333. Credit cannot be earned for both RUS 2333 and RUS 3333.)

3033 Oral Communication Skills
(3-0) 3 hours credit. Prerequisite: RUS 2013 or the equivalent.
Further development of speaking skills in a variety of contexts. May be repeated once for credit when topics vary.

3143 Structure of Russian Language
(3-0) 3 hours credit. Prerequisite: RUS 2013 or the equivalent.
Extensive grammar review. Further development of speaking and writing skills through activities directed at the intermediate-high and advanced levels. Considerations of differences between written and spoken language. May be repeated once for credit when topics vary.

3213 Advanced Russian
(3-0) 3 hours credit. Prerequisite: RUS 2023 or the equivalent.
Opportunity to develop advanced-level oral and written communication skills in the Russian language, along with enhanced comprehension skills in listening and reading. May be repeated for credit when topics vary.

3633 Topics in Russian Culture
(3-0) 3 hours credit. Prerequisite: RUS 2013 or the equivalent.
Further development of proficiency by content-based instruction. Topics may include geography, traditions, history, music, literature, art, or film. May be repeated for credit when topics vary.

Sociology (SOC)

Department of Sociology, College of Liberal and Fine Arts

1013 Introduction to Sociology [TCCN: SOCI 1301.]
(3-0) 3 hours credit.
Introduces the study of human groups, the relations of individuals to groups, and the process of becoming a group member and functioning in a group setting. (Formerly titled "Introduction to the Study of Society.")

1043 Introduction to Public Health
(3-0) 3 hours credit.
Introduces the discipline of public health. Covers a variety of disciplines to the basic tenets of public health. Provides a history of public health, an introduction to the five core disciplines (Epidemiology, Biostatistics, Environmental Health, Social and Behavioral Health, and Health Policy & Management). Also covers the role of public health in global society. (Same as PUB 1113. Credit cannot be earned for both SOC 1043 and PUB 1113.)

2013 Social Problems [TCCN: SOCI 1306.]
(3-0) 3 hours credit.
Examines major contemporary social problems and their causes and consequences. Topics may include poverty, racism, sexism, deviance and crime, drug and alcohol dependence, the urban crisis, overpopulation, and war.

2023 Social Context of Drug Use [TCCN: SOCI 2340.]
(3-0) 3 hours credit.
Explores the use and abuse of mind-altering substances within society. Topics of study may include historical treatments of drug use, drug treatment and recovery interventions, the global magnitude of contemporary drug problems, and the problematic nature and consequences of drug legislation and enforcement. (Formerly titled "Drugs in Society.")

3013 Social Stratification
(3-0) 3 hours credit.
Examines theory and research pertaining to inequalities of power, prestige, and economic privilege. Major emphasis upon inequality and social mobility in the United States.

3033 Population Dynamics
(3-0) 3 hours credit.
An examination of trends in mortality, fertility, and migration for selected countries, and their projected consequences. Associated population policies and options are considered.

3043 Race and Ethnic Relations
(3-0) 3 hours credit.
Examines the dominant-subordinate relations in world societies, with major emphasis on the United States. Models of assimilation, colonial and class society, and consequences for minority and majority populations may be examined.

3053 Deviance and Difference
(3-0) 3 hours credit.
Analyzes the forms of deviance and consideration of social/political trends toward difference. An examination of theories may include: biological, analytic, labeling, functionalist, culture conflict, radical, and poststructuralist.

3063 Collective Behavior
(3-0) 3 hours credit. Prerequisite: SOC 1013, or consent of instructor.
Focuses on case studies and associated theory dealing with various forms of collective behavior ranging from spontaneous events to organized mass movements.

3083 Social Change and Development
(3-0) 3 hours credit.
Presents principal models and theories of social transformation applied to examples of societal change. Topics may include consideration of master trends such as rationalization, industrialization, and bureaucratization, and the expansion and contraction of global interconnectedness.

3093 Religion and Society
(3-0) 3 hours credit.
Focuses on religious institutions and movements in the United States with comparative data from other countries. Topics may include the relationship of religious institutions to social stratification, economic institutions, and political and social change.

3113 Criminology
(3-0) 3 hours credit.
Examines the nature, prevalence, and impact of different types of legal violations, including street crime, organized crime, political crime, and white-collar crime. Includes treatment of social and legal responses to crime.

3163 Families in Society
(3-0) 3 hours credit.
Examines the modern family, structures and functions, variant patterns and the influence of the broader society in producing family change. Contemporary and continuing issues are covered in the context of theory and research. Topics may include variability in childhood socialization, family violence, changing gender roles, marriage, divorce and remarriage, alternative family structures, and the aging family. (Formerly SOC 2053. Credit cannot be earned for both SOC 3163 and SOC 2053.) (Formerly titled "Marriage and Family.")

3193 The Sociology of Work and Occupations
(3-0) 3 hours credit. Prerequisite: SOC 1013, or consent of instructor.
Explores occupational structures in selected societies; the relationship between occupations and economic rewards, lifestyles, and worldview; and determinants of work satisfaction.

3203 Gerontology
(3-0) 3 hours credit.
Examines the historical and cross-cultural differences in the status of the elderly in society. Includes interaction of the elderly with social institutions, and policy implications of the demographic shift toward an aging population in the United States.

3213 Medical Sociology
(3-0) 3 hours credit.
Examines social factors in the cause and distribution of disease; relationships between patients and medical professionals; the contribution of lay belief to health, illness, treatment, and recovery; the organization of health-care delivery; and the disparities in the distribution of medical resources.

3223 Population Dynamics and Demographic Techniques
(3-0) 3 hours credit.
Introduces the common methods, techniques, and models employed by demographers. Topics may include demographic data sources, introduction to life table techniques; construction, standardization, and decomposition of rates; measures of concentration and diversity; and population growth projections. Students will become familiar with microcomputer programs for demographic analysis. (Formerly titled "Demographic Techniques.")

3253 The Individual and Society
(3-0) 3 hours credit.
Examines the major theories dealing with the effects of culture and social structure on the development and functioning of the personality and the self.

3263 Latinas in U.S. Society
(3-0) 3 hours credit.
Focuses on women of Latino descent in the United States with a comparative emphasis on the experiences of Texas Latinas relative to those residing elsewhere in the Southwest. Topics may include: historical presence in the Southwest; patriarchy and familism; labor and employment issues; immigration and border issues; political involvement and feminist vision; artistic, cultural and intellectual expression. (Same as WS 3953. Credit cannot be earned for both SOC 3263 and WS 3953 when topic is the same.)

3283 Poverty
(3-0) 3 hours credit.
Examines the causes and consequences of poverty in the United States and selected other societies. An examination of social programs designed to combat poverty.

3293 Sociology of Gender
(3-0) 3 hours credit.
Explores the nature of gender roles in our own and other societies. Consideration of how people learn gender roles and the outcomes of this learning for individuals, families, and societies. Alternatives to conventional gender roles. (Formerly titled "Gender Roles.")

3323 Introduction to Social Research
(3-0) 3 hours credit. Prerequisite: SOC 1013.
Introduction to the philosophy of science and the logic of research design. Examines a variety of social research designs including experiments, survey research, content analysis, and historical analysis. Course emphasizes techniques related to information gathering, basic data analysis, and reporting findings. (Formerly titled "Research Methods in Sociology.")

3343 Classical Sociological Theory
(3-0) 3 hours credit. Prerequisite: SOC 1013.
Examines the transition from social philosophy to sociology, with special emphasis on the work of Karl Marx, Emile Durkheim and Max Weber. The foundational theories and concepts in sociology are addressed, with attention also given to the application of theory to longstanding and current social issues. (Formerly SOC 3153. Credit cannot be earned for both SOC 3343 and SOC 3153.)

3353 Contemporary Sociological Theory
(3-0) 3 hours credit. Prerequisite: SOC 1013.
Examines contemporary paradigms in sociological theory (e.g., functionalism, neo-Marxism, phenomenology, and feminism), and current debates over the state of theory. Attention is also given to the linkages between theory and research. (Formerly SOC 3183. Credit cannot be earned for both SOC 3353 and SOC 3183.)

3373 Qualitative Research Methods
(3-0) 3 hours credit. Prerequisite: SOC 3323.
Introduces the philosophy of science and research design, including participant observation, in-depth interviews, oral history, and focus groups through field research. The course provides opportunities for developing qualitative research skills while gaining familiarity with issues and problems common to these methods.

3383 Sociology of the African American Community
(3-0) 3 hours credit.
Examines the history, struggles, and diversity of the African American community through relevant sociological frameworks. Topics may include the historical role of African Americans within urban society, the current status of blacks in the United States, and contemporary social issues relevant to race.

3393 Quantitative Research Methods
(3-0) 3 hours credit. Prerequisites: Completion of the Core Curriculum requirement in mathematics, SOC 1013, and SOC 3323.
Application of conceptualization and operationalization in the quantitative analysis of a variety of sociological subjects. Use of elementary measures of central tendency and dispersion, crosstabulations, and linear model procedures to evaluate relationships among variables; problems of descriptions and inference. Includes the use of standard computer packages and secondary analysis of data. (Formerly SOC 3313. Credit cannot be earned for both SOC 3313 and SOC 3393.)

3413 Sociology of the Mexican American Community
(3-0) 3 hours credit.
Focuses on contemporary issues regarding Mexican American communities. Topics of discussion include family structure, gender roles, border issues and political power. Comparison with other minorities and the majority group will allow discussion of variant community patterns. (Formerly titled "Mexican American Family.")

3423 Mass Media in Society
(3-0) 3 hours credit.
Examines media production and its role in the economy; the construction of media meaning, signification, and ideology; and the role of the audience in making sense of messages. Larger issues of societal power will be treated, along with an examination of alternative media.

3433 Mexican Immigration and U.S. Society
(3-0) 3 hours credit.
Focuses on the growth and development of the Mexican population in the United States and controversies around Mexican immigration, both legal and undocumented. Uses a sociological perspective to present a historical analysis of Mexican migration to the United States, theoretical explanations of migrations, and the social implications of these issues.

3463 Sociology of Sport and Leisure
(3-0) 3 hours credit.
Examines the social meanings of play and leisure in advanced industrial societies. Emphasis will be on the origins, structure, and function of these phenomena in the United States, with major emphasis on sport as an institution.

3503 Sociology of Education
(3-0) 3 hours credit.
Explores education as an institution that affects and is affected by the larger social structure. Topics may include the role of schools in society; connections between schooling, stratification and the economy; gender and ethnic differences in achievement; and social and cultural contexts of learning.

3513 Children and Society
(3-0) 3 hours credit.
Examines the evolution of concepts of childhood over time. Topics may include theories of child development, cultural and social influences in child raising, the effects of affluence and poverty on children, children in postmodern societies, and child socialization in different cultures.

3543 Data Management in Public Health
(3-0) 3 hours credit.
Provides an introduction to data management for research projects in public health using microcomputers. Topics include design of data collection forms, data entry, computer managed documentation and statistical computing using SPSS/SAS. (Same as PUB 2113. Credit cannot be earned for both SOC 3543 and PUB 2113.)

4013 Public Sociology
(3-0) 3 hours credit.
Examines the historical development, recent trends, and issues and debates that have shaped the intellectual development of public sociology. Explores public sociology as a model or approach that uses the discipline's research tools to address public issues in a manner accessible to wider audiences beyond the academy. Readings from past and current public sociologists will be incorporated. Debates within the field about the validity of public sociology will also be discussed.

4023 Violence and Society
(3-0) 3 hours credit.
Examines and assesses the major social science perspectives and theories that attempt to explain why violence occurs in society. (Formerly SSC 3203. Credit cannot be earned both for SOC 4023 and SSC 3203.)

4043 Global Health
(3-0) 3 hours credit.
Covers the field of global health, particularly the serious health problems facing developing world populations. The course begins with an introduction to the global burden of disease and then examines the complex social, economic, political, environmental, and biological factors that structure the origins, consequences and possible treatments of disease. Provides an introductory survey of the basic issues and initiatives in contemporary international public health, and develops student awareness of the socioeconomic and cultural complexity of health problems in developing nations.

4053 Health Care System
(3-0) 3 hours credit.
Covers the complexities of health care organization and finance and presents a general overview of how the U.S. health care systems work and how the major components within the system fit together. Covers basic structures and operations of the U.S. health system—from its historical origins and resources, to its individual services, cost, and quality. Compares and contrasts the U.S. health care system with other health care systems around the world.

4073 Social and Behavioral Theories in Public Health
(3-0) 3 hours credit.
Examines the fundamental social and behavioral theories that drive research and practice in public health. The course covers a number of social and behavioral theories commonly used in public health education interventions at the individual, group, and community levels.

4083 Behavioral Epidemiology
(3-0) 3 hours credit.
Provides an introduction to the social/behavioral sciences in public health, basic behavioral measurement methods, and basic knowledge of epidemiologic application in the area of social and behavioral science. The course will stress the relationship of human behavior to disease, and ways in which the social/behavioral sciences differ from epidemiology with respect to approaches to measurement, terminology, and analytic methods. In addition, the course will examine the literature, and explore in-depth and quantify the determinants of behavior that are risk factors for several chronic and infectious disorders. (Same as PUB 3413. Credit cannot be earned for both SOC 4083 and PUB 3413.)

4433 Culture and Society
(3-0) 3 hours credit.
Explores the social significance of cultural production, including the relationships between art, consciousness, the economy, and history. Themes examined may include the social production of art, art and ideology, the problem of artistic reception, and art movements and cultural resistance. Topics include art and culture in minority social movements, the relation between high and low culture, and cultural conflict over art.

4683 Health Disparities
(3-0) 3 hours credit.
The main purpose of this course is to provide students with an understanding of how racial/ethnic, social, economic, demographic and gender factors contribute to disparities in health and health care in the United States.

4853 Special Studies in Sociology
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree. (Formerly SOC 4953. Credit may be earned for both SOC 4853 and SOC 4953 but may not exceed 6 semester credit hours combined.)

4863 Topics in Sociology
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for a specialized topic not normally or not often available as part of the regular course offerings. Special Topics may be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4911,3 Independent Study
1 or 3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4933,6 Internship in Sociology
3 or 6 hours credit. Prerequisites: Completion of SOC 3343 or SOC 3353 and SOC 3373 or SOC 3393 and consent of internship coordinator.
Provided as part of the COLFA Signature Experience and offers supervised work experience relevant to sociology within selected organizations and agencies. Internships selected should be relevant to previous coursework. A maximum of 6 semester credit hours may be earned through this internship.

4993 Honors Thesis
3 hours credit. Prerequisite: Enrollment limited to candidates for Honors in Sociology during the last two semesters. Supervised research and preparation of an honors thesis. May be repeated once with advisor's approval.

Spanish (SPN)

Department of Modern Languages and Literatures, College of Liberal and Fine Arts

1008 Elementary Spanish-Accelerated
(6-4) 8 hours credit.
A one-semester course offering the opportunity to develop listening, speaking, reading, and writing skills. Emphasis on listening and speaking. Introduction to Hispanic culture. (Credit for SPN 1008 is equivalent to credit for both SPN 1014 and SPN 1024.)

1014 Elementary Spanish I [TCCN: SPAN 1411.]
(3-2) 4 hours credit.
Fundamentals of Spanish, offering the opportunity to develop listening, speaking, reading, and writing skills. Emphasis on listening and speaking. Introduction to Hispanic culture.

1024 Elementary Spanish II [TCCN: SPAN 1412.]
(3-2) 4 hours credit. Prerequisite: SPN 1014, the equivalent, or an appropriate placement test score.
Fundamentals of Spanish offering the opportunity to develop listening, speaking, reading, and writing skills. Emphasis on listening and speaking. Further study of Hispanic culture.

2003 Spanish for Elementary Education
(3-1) 3 hours credit. Prerequisite: 4 to 8 hours at the 1000 level or the equivalent, appropriate placement score, or consent of instructor.
Intermediate Spanish, emphasis on listening, speaking, reading and writing, with grammar and vocabulary to support language use. Hispanic culture focus. Task-based instruction focusing on basic face-to-face interactions with Spanish-speaking parents and community, classroom interaction with Spanish-speaking students, and other relevant tasks.

2006 Intermediate Spanish-Accelerated
(6-2) 6 hours credit. Prerequisite: SPN 1008, SPN 1024, the equivalent, or an appropriate placement test score.
A one-semester course offering continued opportunity to develop listening, speaking, reading, and writing skills. Includes grammar and further study of Hispanic culture. (Credit for SPN 2006 is equivalent to credit for both SPN 2013 and SPN 2023.)

2013 Intermediate Spanish I [TCCN: SPAN 2311.]
(3-1) 3 hours credit. Prerequisite: SPN 1008, SPN 1024, the equivalent, or an appropriate placement test score.
Continued opportunity to develop listening, speaking, reading, and writing skills. Grammar and further study of Hispanic culture.

2023 Intermediate Spanish II [TCCN: SPAN 2312.]
(3-1) 3 hours credit. Prerequisite: SPN 2013, the equivalent, or an appropriate placement test score.
Continued opportunity to develop listening, speaking, reading, and writing skills. Grammar review and further study of Hispanic culture.

2333 Hispanic Literature in English Translation [TCCN: SPAN 2323.]
(3-0) 3 hours credit. Prerequisite: WRC 1013 or the equivalent.
Major works in Hispanic literatures: themes, genres, and movements. May not be applied to a major in Spanish. (Formerly SPN 3333. Credit cannot be earned for both SPN 2333 and SPN 3333.)

2513 Spanish for Special Purposes [TCCN: SPAN 2316.]
(3-1) 3 hours credit. Prerequisite: SPN 2013, the equivalent, or an appropriate placement test score.
Foreign language communication and cross-cultural skills relevant to one or more of the following areas: business, health care, law, education, science, southwest Spanish, Hispanic literature, or technology. May be repeated for credit when topics vary.

2523 Hispanic Culture and Communication [TCCN: SPAN 2324.]
(3-1) 3 hours credit. Prerequisite: SPN 2013, the equivalent, or an appropriate placement test score.
A brief review of history, geography, worldview, and customs common in Latin America and Spain, with particular emphasis on Mexico and U.S. Hispanic culture. Use of some target culture source materials. Continued opportunity to develop oral and written communication in Spanish and to understand mainstream U.S. Hispanic cross-cultural communication.

3003 Oral and Written Expression
(3-1) 3 hours credit. Prerequisite: SPN 2023, the equivalent, or an appropriate placement test score. If placement is at a higher level, a Spanish elective may be substituted for the minor.
Conversation, reading, and grammar review toward building literacy skills. Opportunities for composition and oral communication for a variety of situations and topics. May not be used as an elective for the Spanish major. (Formerly SPN 2103. Credit cannot be earned for both SPN 3003 and SPN 2103.)

3013 Spanish Phonetics and Pronunciation
(3-1) 3 hours credit. Prerequisite: SPN 2023 or SPN 3003, the equivalent, or consent of instructor.
Offers the opportunity for study of the sound system of Latin-American Spanish. Activities may include pronunciation exercises, exercises in sound discrimination and transcription, and articulatory description of various dialects of Spanish.

3033 Oral Communication Skills
(3-0) 3 hours credit. Prerequisite: SPN 2023 or SPN 3003, the equivalent, or consent of instructor.
Opportunity for development of speaking skills in a formal register through activities directed at vocabulary building, grammatical accuracy, and aural/written comprehension. May not be used as an elective for the Spanish major.

3043 Advanced Reading
(3-0) 3 hours credit. Prerequisite: SPN 3063, the equivalent, or consent of instructor.
Approaches to reading, comprehension and analysis of literary and other advanced texts. Use of analytical terminology, advanced vocabulary building, and further development of formal writing skills.

3063 Grammar and Composition
(3-0) 3 hours credit. Prerequisite: SPN 2023 or SPN 3003, or the equivalent.
Extensive review of fundamental grammar with vocabulary building. Development of writing skills and style through activities directed at the Advanced level on the ACTFL-ETS proficiency scale. Consideration of usage and differences between written and spoken language.

3113 Linguistic Structures of Spanish
(3-0) 3 hours credit. Prerequisite: SPN 3063, the equivalent, or consent of instructor.
Offers the opportunity for the application of the basic principles of analysis and description of language structure to Spanish. Attention given to structural regularities at the levels of word formation, syntax, and semantics of formal Spanish, recognizing variability in spoken registers.

3153 Spanish for the Business/Management Fields
(3-0) 3 hours credit. Prerequisite: SPN 2023 or SPN 3003, or the equivalent.
Foreign language skills relevant to careers in business fields. Emphasis on reading skills and simple conversations on business topics. Exposure to terminology from contracts, financial statements, business law, marketing, and banking. Intended for students with some background in Spanish. May be repeated once for credit when topics vary.

3413 The Literature of Spain from the Middle Ages to 1700
(3-0) 3 hours credit. Prerequisite: SPN 3043 or consent of instructor.
Spanish literature from the Middle Ages to 1700. Readings of selections and complete works. Practice in critical analysis through papers and examinations.

3423 The Literature of Spain from 1700 to the Present
(3-0) 3 hours credit. Prerequisite: SPN 3043 or consent of instructor.
Spanish literature from 1700 to the present. Readings of selections and complete works. Practice in critical analysis through papers and examinations.

3463 Latin American Literature to Modernism
(3-0) 3 hours credit. Prerequisite: SPN 3043 or consent of instructor.
Latin American literature from pre-Columbian times to Modernism. Practice in critical analysis through papers and examinations.

3473 Latin American Literature since Modernism
(3-0) 3 hours credit. Prerequisite: SPN 3043 or consent of instructor.
Latin American literature from Modernism to the present. Practice in critical analysis through papers and examinations.

3493 Mexican American Literature
(3-0) 3 hours credit. Prerequisite: SPN 3003, SPN 3063, or consent of instructor.
Readings and discussion of works by Mexican American writers. The expression through poetry, the novel, the short story, and the theater of the Mexican American cultural experience as well as universal themes and literary concerns. Selections from popular literature, including the oral tradition. May be repeated for credit when topics vary.

3613 Spanish Culture and Civilization
(3-0) 3 hours credit. Prerequisite: SPN 3043.
Emergence of the Spanish peoples from pre-Roman times to the present: history, cultural expression, myths, values, and worldview.

3623 Latin American Culture and Civilization
(3-0) 3 hours credit. Prerequisite: SPN 3043.
The cultural life of the respective geographic regions and social strata of Latin America from before the Conquest to the present, as reflected in and interpreted by its literature and arts.

4003 Advanced Language Skills
(3-0) 3 hours credit. Prerequisite: SPN 3043, or SPN 3063 as appropriate, or consent of instructor.
Development of advanced skills in formal Spanish, including such areas as grammar, composition, oratory, creative writing, Spanish/English translation, and other practical applications of language study. May be repeated for credit when topics vary.

4113 Topics in Spanish Linguistics
(3-0) 3 hours credit. Prerequisite: SPN 3113 or consent of instructor.
Advanced study and applications of topics in Spanish linguistics. May include one or more of the following: phonology, morphology, syntax, semantics, dialectology, language variability, and history of Spanish. May be repeated for credit when topics vary. This course fulfills the College of Liberal and Fine Arts Signature Experience.

4123 The Spanish of the Southwest
(3-0) 3 hours credit. Prerequisite: SPN 3013, SPN 3113, or consent of instructor.
The analysis of the Spanish language as used by Mexican Americans in the southwestern United States, from a linguistic and sociolinguistic perspective. Particular attention given to the Spanish spoken in Texas.

4203 Topics in Hispanic Literatures
(3-0) 3 hours credit. Prerequisite: An upper-division course in literature taught in Spanish or consent of instructor.
An intensive study of an area of Spanish or Spanish American literatures. May be repeated for credit when topics vary. This course fulfills the College of Liberal and Fine Arts Signature Experience.

4303 Topics in Hispanic Cultures
(3-0) 3 hours credit. Prerequisite: SPN 3043 or consent of instructor.
An intensive study of an area of Hispanic cultures. May be repeated for credit when topics vary. This course fulfills the College of Liberal and Fine Arts Signature Experience.

4913 Independent Study
3 hours credit. Prerequisites: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree. No more than 6 semester credit hours of SPN 4913 and/or SPN 4993 may be applied to the major in Spanish.

4933 Internship in Spanish
3 hours credit. Prerequisite: Permission of Department Chair.
Supervised experience in a setting that provides the opportunity to integrate theory and practice in language usage. May be repeated once for credit.

4953 Special Studies in Spanish
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Research
3 hours credit. Prerequisite: Consent of the undergraduate advisor.
Supervised research and preparation of an honors thesis. May be repeated once for credit, with approval. No more than 6 semester credit hours of SPN 4993 and/or SPN 4913 may be applied to the major in Spanish.

Special Education (SPE)

Department of Interdisciplinary Learning and Teaching, College of Education and Human Development

3603 Introduction to Special Education
(3-0) 3 hours credit.
A study of individuals, groups, and populations with disabilities or exceptionalities. Content covered includes special education and disability law, critical issues in special education, special education processes and procedures, etiology, characteristics, prevalence, and placement options. Knowledge and competencies necessary for providing research-based, empirically derived best practices in curriculum and instruction to preschool and school-aged children and youth with exceptionalities in inclusive settings will also be presented. (Formerly ATE 3603, EDP 3603, and IDS 3303. Credit cannot be earned for more than one of the following: ATE 3603, EDP 3603, IDS 3303, or SPE 3603.) (Formerly titled "Introduction to Exceptionality.")

3623 Assessment of Students with Mild/Moderate Disabilities
(3-0) 3 hours credit. Prerequisite: Admission to Teacher Certification Program, SPE 3603, SPE 3693, and ECE 3603. Concurrent enrollment in SPE 3653, SPE 4623, and SPE 4643 is required.
An introduction to assessment of students with mild/moderate disabilities. Informal and formal assessment instruments, procedures, and systems for assessment of aptitude, achievement, adaptive behavior, and language abilities will be studied. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4716 Student Teaching: All Level EC–12. (Formerly EDP 3623. Credit cannot be earned for both SPE 3623 and EDP 3623.) (Formerly titled "Assessment of Exceptional Children.")

3633 Classroom and Behavior Management for Students with Disabilities
(3-0) 3 hours credit. Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3623, SPE 3653, SPE 3693, SPE 4623, SPE 4643, ECE 3603, and RDG 3523. Concurrent enrollment in SPE 3673, SPE 3683, and SPE 4673 is required.
A study of common behavior problems in children with disabilities, behavior management, and other research-supported strategies for addressing behavior issues in children with disabilities. Research related to alternative explanations for behavior and behavior change will be included. Planning, application, and evaluation of a behavior change project is required. (Formerly ATE 3633 and EDP 3633. Credit cannot be earned for more than one of the following: ATE 3633, EDP 3633, or SPE 3633.) (Formerly titled "Classroom and Behavior Management for Exceptional Children.")

3653 Practicum in Special Education (Introduction)
(3-0) 3 hours credit. Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3693, and ECE 3603. Concurrent enrollment in SPE 3623, SPE 4623, and SPE 4643 is required.
Instructional practices for students with disabilities will be studied including instructional design and creation of individual education plans. Application of course content in the field with students with disabilities will be required. Students enrolled in this course will be required to spend 6–8 hours a week in field-based placements, for a total of 60 to 80 hours, dependent upon the field placement program needs and requirements and on instructor requirements. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4716 Student Teaching: All Level EC–12. Restricted course; advisor code required for registration. (Formerly EDP 3653. Credit cannot be earned for both SPE 3653 and EDP 3653.)

3673 Assessment: Students with ASD and Developmental Disabilities
(3-0) 3 hours credit. Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3693, ECE 3603, and RDG 3523. Concurrent enrollment in SPE 3633, SPE 3683, and SPE 4673 is required.
An introduction to formal and informal standardized assessment procedures for students with autism spectrum disorders and developmental disabilities. Course emphasis will be on the evaluation of instruction through assessment and using assessment for instructional design and programmatic planning for students with autism spectrum disorders and developmental disabilities. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4716 Student Teaching: All Level EC–12.

3683 Special Education Across the Lifespan
(3-0) 3 hours credit. Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3693, ECE 3603, and RDG 3523. Concurrent enrollment in SPE 3633, SPE 3673, and SPE 4673 is required.
The study of programs and services in special education, including early childhood intervention and transition, that impact students with disabilities throughout the lifespan. The course will focus on supports, procedures, and resources for facilitating transitions and communication of transition activities involving the student and families.

3693 Special Education Law
(3-0) 3 hours credit. Prerequisite: Admission to Teacher Certification Program.
A study of the local, federal and state laws, regulations, rules, and ethics that govern special education. Course topics will include due process, confidentiality, monitoring and evaluation requirements, and the provision of related services. Emphasis on terminology, definitions, classification systems, and current issues and trends.

4623 Mathematics Instruction for Students with Disabilities
(3-0) 3 hours credit. Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3693, ECE 3603, MAT 1153, and MAT 1163. Concurrent enrollment in SPE 3623, SPE 3653, and SPE 4643 is required.
The study of the learning and development of mathematical concepts, procedures, and skills for students with disabilities. Concepts, methods, and appropriate use of technology related to numbers, patterns, operations, problem solving, geometry, and algebraic reasoning will be included. Research-based methods and strategies will be applied in the field. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4716 Student Teaching: All Level EC–12.

4643 Instruction for Students with Mild/Moderate Disabilities
(3-0) 3 hours credit. Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3693, and ECE 3603. Concurrent enrollment in SPE 3623, SPE 3653, and SPE 4623 is required.
This course is a study of the development and implementation of research-validated instructional strategies. Students will learn how to select learning strategies to meet the individual needs of students with disabilities. Specific learning strategies will be evaluated and implemented in classroom settings. Strategies will address the acquisition, storage, and expression of knowledge. Class sessions will involve direct development in learning strategies and specific problem solving associated with strategies instruction. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4716 Student Teaching: All Level EC–12. (Formerly titled "Specialized Instructional Methods for Students with Exceptionalities.")

4653 Practicum in Special Education (Advanced)
(3-0) 3 hours credit. Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3623, SPE 3633, SPE 3653, SPE 3673, SPE 3683, SPE 3693, SPE 4623, SPE 4643, SPE 4673, ECE 3603, and RDG 3523. Concurrent enrollment in SPE 4683 and SPE 4693 is required.
The study of the planning, application, and evaluation of Individual Educational Plans (IEPs) and the specialized educational and related services provided under the law to students with disabilities. Students enrolled in this course will be required to spend 6 to 8 hours a week in field-based placements for a total of 60 to 80 hours, dependent upon field placement program needs and requirements and on instructor requirements. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4716 Student Teaching: All Level EC–12. Restricted course; advisor code required for registration. (Formerly EDP 4653. Credit cannot be earned for both SPE 4653 and EDP 4653.)

4663 Special Topics in Special Education
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Organized course offering the opportunity for specialized study not normally or not often available as part of the organized course offerings. Special Topics can be repeated for credit when topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4673 Instruction for Students with Autism Spectrum Disorders and Developmental Disabilities
(3-0) 3 hours credit. Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3693, ECE 3603, and RDG 3523. Concurrent enrollment in SPE 3633, SPE 3673, and SPE 3683 is required.
This course is a study of the development and implementation of research-validated instructional strategies for students with autism spectrum disorders and developmental disabilities. Course topics will include the use of formal and informal assessments to determine appropriate academic, social, and behavioral goals and objectives for students and identifying research-validated strategies to assist students with meeting these goals. This course must be completed with a grade of "B–" or better for it to serve as a prerequisite for C&I 4716 Student Teaching: All Level EC–12.

4683 Communication and Collaboration in Special Education
(3-0) 3 hours credit. Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3623, SPE 3633, SPE 3653, SPE 3673, SPE 3683, SPE 3693, SPE 4623, SPE 4643, SPE 4673, ECE 3603, and RDG 3523. Concurrent enrollment in SPE 4653 and SPE 4693 is required.
This course will focus on the collaborative roles and responsibilities of teachers, school district personnel, and parents/families in providing individualized educational programs to students with disabilities. Effective strategies for communication and collaboration will be studied. Additional course topics include consultation, collaborating with general education teachers, and designing and managing the activities of paraprofessionals.

4693 Assistive Technology
(3-0) 3 hours credit. Prerequisites: Admission to Teacher Certification Program, SPE 3603, SPE 3623, SPE 3633, SPE 3653, SPE 3673, SPE 3683, SPE 3693, SPE 4623, SPE 4643, SPE 4673, ECE 3603, and RDG 3523. Concurrent enrollment in SPE 4653 and SPE 4683 is required.
This course is a study of the use of technology in facilitating the teaching and learning of students with disabilities. Course will emphasize the selection and use of assistive technology devices and services for students, including those used for communication and mobility and those that facilitate performance in academic environments.

4913 Independent Study
3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree.

4993 Honors Thesis
3 hours credit. Prerequisites: Enrollment limited to candidates for honors in the Department of Interdisciplinary Learning and Teaching during the last two semesters; consent of the Honors College.
Supervised research and preparation for an honors thesis. May be repeated once with advisor's approval.

Sport, Event and Tourism Management (SET)

Department of Marketing, College of Business

2123 Survey of Tourism
(3-0) 3 hours credit.
Historical development and organizational structure of the tourism industry. Emphasis is placed on the inter-relationship between tourist, resident, business, and government. (Formerly MKT 2123 and MKT 3123. Credit cannot be earned for more than one of the following: SET 2123, MKT 2123, or MKT 3123.)

3043 Attractions Management
(3-0) 3 hours credit. Prerequisite: SET 2123.
Explores all aspects of managing visitor attractions such as amusement parks, theme parks, museums, national parks, and heritage sites.

3233 Sport Management
(3-0) 3 hours credit. Prerequisite: SET 2123.
Focuses on allocating resources and managing sport and recreation operations. Students will receive an in-depth look at the human resources function as it pertains to sport organizations, including recruitment, selection, compensation, hiring/firing, employee training and motivation, compliance with state and federal regulations, risk management, and community relations.

3283 Sport and Event Media Relations
(3-0) 3 hours credit. Prerequisite: SET 2123.
Examines the media relations function in sport organizations with a special emphasis on the relationships between journalists and sport organizations, and the role of information specialists. Media relations responsibilities include organizing and managing game/event coverage, promoting events, and developing publicity campaigns.

3313 Sport Tourism and Events
(3-0) 3 hours credit. Prerequisite: SET 2123.
Comprehensive study of the sport travel and tourism industry. The industry includes both participatory sport tourism (e.g., skiing, golf, and adventure trips) and event-based sport tourism (e.g., the Olympics, professional and amateur sports, and World Cup soccer). Covers all aspects of sport tourism including economics, finance, and marketing.

3333 Event Management
(3-0) 3 hours credit. Prerequisite: SET 2123.
This course presents the event planning process from the inception of an event idea through the development stage, planning, and implementation. The model presented in this class pertains to all types of events including meetings, festivals, fairs, expos, recreation and sport events, fundraisers, etc. with a particular focus on project planning, budgeting, and marketing the event.

3413 Resort and Club Management
(3-0) 3 hours credit. Prerequisite: SET 2123.
The management, marketing, and operations of resort and private club properties including hotel resorts, timeshares, casinos, private country clubs, golf and tennis clubs, fitness clubs, and entertainment facilities. Students will get an overview of all aspects of the business and are provided the opportunity to gain an understanding of the differences between profit and nonprofit organizations.

3543 Economics of Tourism and Leisure
(3-0) 3 hours credit. Prerequisites: ECO 2023 and SET 2123.
Application of economic theories and principles to the areas of tourism, sport, and recreation. Some of the main topics include supply and demand, market structure, competition, and the impacts on the economy, society, and the environment.

4233 Sport and Event Facility Management
(3-0) 3 hours credit. Prerequisite: SET 3233.
Overview of managing a facility used for sports, conventions, and entertainment events. Topics may include conducting feasibility studies, market research, facility design and layout, event bidding, quality assurance, risk management, and event staffing. (Same as FM 4233. Credit cannot be earned for both SET 4233 and FM 4233.)

4543 Destination Marketing
(3-0) 3 hours credit. Prerequisite: SET 2123.
Emphasizes a strategic approach to marketing for tourism destinations: communities, regions, attractions, and resorts. Focus is on the optimal planning, development, and positioning in the context of the overall marketing plan. Includes consideration of environmental and resource requirements, as well as tourism's social and cultural ramifications. (Formerly MKT 4543. Credit cannot be earned for both SET 4543 and MKT 4543. Marketing majors cannot take SET 4543 as an upper-division Marketing elective.)

4811-3 Special Topics in Sport, Event and Tourism Management
(1-0, 2-0, 3-0) 1 to 3 hours credit.
Analysis and discussion of events, issues, and trends affecting management and marketing in the sport, event or tourism industries. May be repeated for credit when topics vary.

4921-3 Independent Study in Sport, Event and Tourism Management
1 to 3 hours credit. Prerequisites: Student must have a 3.0 grade point average and permission in writing from the Tourism instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for required forms.
The course may require independent research, reading, planning, discussion, and/or writing under the direction of a sponsoring faculty instructor. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, will apply to a Bachelor of Business Administration degree.

4941-3 Internship in Sport, Event and Tourism Management
1 to 3 hours credit. Prerequisites: MGT 3003, student must currently have an overall 2.5 grade point average, and permission in writing from the sponsoring Tourism instructor, the Department Chair, and the Dean of the College of Business. See the College of Business Undergraduate Advising Center for additional requirements and required forms.
The course is designed for students seeking supervised full- or part-time work experience in the sport, event or tourism industries. May be repeated for credit, but not more than 6 semester credit hours of Internship in Tourism will apply to a Bachelor in Business Administration degree.

Statistics (STA)

Department of Management Science and Statistics, College of Business

1043 Introduction to Quantitative Reasoning [TCCN: MATH 1442.]
(3-0) 3 hours credit. Prerequisite: Satisfactory performance on placement examination.
Intended primarily for liberal arts majors, this course provides an overview of statistical methods useful for judgment and decision making under conditions of uncertainty. The emphasis of the course will be on using quantitative reasoning to gain insight and draw conclusions from observations. The common pitfalls of statistical studies and common myths about the fallacies of inference will be discussed. Topics may include data analysis, inference, correlation, and regression. (Formerly titled "Introduction to Statistical Reasoning.")

1053 Basic Statistics [TCCN: MATH 1342.]
(3-0) 3 hours credit. Prerequisite: Satisfactory performance on placement examination.
Descriptive statistics; histograms; measures of location and dispersion; elementary probability theory; random variables; discrete and continuous distributions; interval estimation and hypothesis testing; simple linear regression and correlation; and applications of the chi-square distribution.

1403 Probability and Statistics for the Biosciences [TCCN: MATH 2342.]
(3-0) 3 hours credit. Prerequisite: MAT 1193 or an equivalent.
Probability and statistics from a dynamical perspective, using discrete-time dynamical systems and differential equations to model fundamental stochastic processes such as Markov chains and the Poisson processes important in biomedical applications. Specific topics to be covered include probability theory, conditional probability, Markov chains, Poisson processes, random variables, descriptive statistics, covariance and correlations, the binomial distribution, parameter estimation, hypothesis testing and regression. (Formerly STA 1404. Credit cannot be earned for both STA 1403 and STA 1404.)

1993 Biostatistics
(3-0) 3 hours credit. Prerequisites: A course in college algebra and one of the following: STA 1043, STA 1053 or PSY 2073.
Point estimator properties, inference about the means and variances of two or more populations, categorical data analysis, linear regression, analysis of variance, and nonparametric tests. Open to students of all disciplines. (Formerly titled "Statistical Methods for the Life and the Social Sciences.")

2303 Applied Probability and Statistics for Engineers
(3-0) 3 hours credit. Prerequisite: MAT 1224.
Fundamental concepts of probability and statistics with practical applications to engineering problems. Emphasis on sampling, statistical inference, measurement error analysis and quantifying risk, safety and reliability in engineering design.

3003 Applied Statistics
(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in MAT 1033, MAT 1093, MAT 1203, MAT 1214, or an equivalent.
Introduction to the Scientific Method; principles of sampling and experimentation; scales of measurement, exploratory data analysis; introduction to basic probability; models for discrete and continuous data; simple simulations and inferences based on resampling; fundamentals of hypothesis testing and confidence intervals. The course will emphasize data analysis and interpretation and effective communication of results through reports or presentations.

3013 Multivariate Analysis for the Life and Social Sciences
(3-0) 3 hours credit. Prerequisite: STA 1993, STA 3003, STA 3513, or an equivalent.
Linear algebra preliminaries, the multivariate normal distribution, tests on means, discriminant analysis, cluster analysis, principal components, and factor analysis. Use of software packages will be emphasized. Open to students of all disciplines.

3023 Statistical Mathematics
(3-0) 3 hours credit. Prerequisite: Completion of or concurrent enrollment in MAT 2214, or an equivalent.
Concepts include sequences, limits, convergence of series and determining sums by computational methods, special series, special functions, optimization including the discussion of finding minima and maxima functions. Other topics include matrix theory including addition, multiplication, solving linear systems of equation, rank, trace, determinant, and inverse of a matrix; eigenvalues and eigenvectors.

3313 Experiments and Sampling
(3-0) 3 hours credit. Prerequisite: One of the following: MS 1023, PSY 3013, STA 1043, STA 1053, STA 2303, STA 3003, or an equivalent.
Research techniques for collecting quantitative data: sample surveys, designed experiments, simulations, and observational studies; development of survey and experimental protocols; measuring and controlling sources of measurement error.

3433 Applied Nonparametric Statistics
(3-0) 3 hours credit. Prerequisite: One of the following: MS 3313, PSY 3013, STA 1993, STA 2303, STA 3003, or STA 3513.
Tests of location, goodness-of-fit tests, rank tests, tests based on nominal and ordinal data for both related and independent samples, and measures of association.

3513 Probability and Statistics
(3-0) 3 hours credit. Prerequisites: MAT 1224 and STA 3003.
Axiomatic probability; random variables; discrete and continuous distributions; bivariate and multivariate distributions and their applications; mixture distributions; moments and generating functions, bivariate transformations.

3523 Mathematical Statistics
(3-0) 3 hours credit. Prerequisite: STA 3513 or an equivalent.
Sampling distributions and the Central Limit Theorem; order statistics; estimation including method of moments and maximum likelihood; properties of estimators; hypothesis testing including likelihood ratio tests; introduction to ANOVA and regression.

3533 Probability and Random Processes
(3-0) 3 hours credit. Prerequisites: EE 3423 and EGR 2323.
Probability, random variables, distribution and density functions, limit theorems, random processes, correlation functions, power spectra, and response of linear systems to random inputs.

3813 Discrete Data Analysis
(3-0) 3 hours credit. Prerequisite: STA 1993, STA 3003, or STA 3513.
Introduction to methods for analyzing discrete (categorical) data. Course emphasizes the uses and interpretations of the methods rather than the underlying theory. Topics include Two-way and Three-Way Contingency Tables, Partial Association, Cochran-Mantel-Haenszel Method, Generalized Linear models, Model Inference and Model Checking, Logistic Regression, Loglinear Models, and Models for Matched Pairs.

4133 Introduction to Programming and Data Management in SAS
(3-0) 3 hours credit. Prerequisite: Completion of a programming course or consent of instructor.
This course introduces essential programming concepts using SAS software, with a focus on data management and the preparation of data for statistical analysis. Topics include reading raw data, creating temporary and permanent datasets, manipulating datasets, summarizing data, and displaying data using tables, charts and plots. (Formerly titled "Statistical Computing Packages.")

4143 Data Mining
(3-0) 3 hours credit. Prerequisites: STA 1993 and STA 4133, or equivalents.
Acquisition, organization, exploration, and interpretation of large data collections. Data cleaning, representation and dimensionality, multivariate visualization, clustering, classification, and association rule development. A variety of commercial and research software packages will be used.

4233 Statistical Applications Using SAS Software
(3-0) 3 hours credit. Prerequisites: STA 4133 or approval of instructor; and one of the following: MS 3313, PSY 3013, STA 1993, STA 3003, STA 3513, or STA 3523.
Analysis of datasets using the statistical software package SAS. Methods for analyzing continuous and categorical data will be introduced, using procedures from Base SAS, SAS/GRAPH and SAS/STAT software. Techniques for efficient programming will be stressed. Examples will be drawn from regression analysis, analysis of variance, categorical analysis, multivariate methods, simulation, and resampling.

4643 Introduction to Stochastic Processes
(3-0) 3 hours credit. Prerequisite: STA 3513.
Probability models, Poisson processes, finite Markov chains, including transition probabilities, classification of states, limit theorems, queuing theory, and birth and death processes.

4713 Applied Regression Analysis
(3-0) 3 hours credit. Prerequisite: One of the following: MS 3313, PSY 3013, STA 1993, or STA 3003.
An introduction to regression analysis, with emphasis on practical aspects, fitting a straight line, examination of residuals, matrix treatment of regression analysis, fitting and evaluation of general linear models, and nonlinear regression.

4723 Introduction to the Design of Experiments
(3-0) 3 hours credit. Prerequisite: One of the following: MS 3313, PSY 3013, STA 1993, or STA 3003.
General concepts in the design and analysis of experiments. Emphasis will be placed on both the experimental designs and analysis and tests of the validity of assumptions. Topics covered include completely randomized designs, randomized block designs, complete factorials, fractional factorials, and covariance analysis. The use of computer software packages will be stressed.

4753 Time-Series Analysis
(3-0) 3 hours credit. Prerequisite: STA 3513 or STA 3533, or an equivalent.
Development of descriptive and predictive models for time-series phenomena. A variety of modeling approaches will be discussed: decomposition, moving averages, time-series regression, ARIMA, and forecasting errors and confidence intervals.

4803 Statistical Quality Control
(3-0) 3 hours credit. Prerequisite: STA 1993, STA 2303, STA 3003, STA 3513, or an equivalent.
Statistical methods are introduced in terms of problems that arise in manufacturing and their applications to the control of manufacturing processes. Topics include control charts and acceptance sampling plans. (Same as MAT 4803. Credit cannot be earned for both STA 4803 and MAT 4803.)

4903 Applied Survival Analysis
(3-0) 3 hours credit. Prerequisite: STA 3523 or an equivalent.
Measures of survival, hazard function, mean residual life function, common failure distributions, procedures for selecting an appropriate model, the proportional hazards model. Emphasis on application and data analysis using SAS.

4911-3 Independent Study
1 to 3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4933 Internship in Statistics
3 hours credit. Permission in writing from the instructor, the Department Chair, and the Dean of the College of Business; and 2.5 grade point average. See the College of Business Undergraduate Advising Center for required forms and additional requirements.
Supervised full- or part-time work experience in statistics. Offers opportunities for applying statistics in private businesses or public agencies. May be repeated for credit, but not more than 6 semester credit hours will apply to a bachelor's degree.

4951-3 Special Studies in Statistics
(1-0, 2-0, 3-0) 1 to 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when the topics vary, but not more than 6 semester credit hours, regardless of discipline, will apply to a bachelor's degree.

4961 Actuarial Science Examination Preparation
(1-0) 1 hour credit.
An organized course offering specialized study for Actuarial Science Examinations. Topics covered include General Probability, Random Variables and Probability Distributions, Multivariate Distributions, and Risk Management and Insurance. May be repeated for credit twice.

4993 Honors Thesis
3 hours credit. Prerequisites: STA 3523 and consent of instructor. Enrollment limited to students applying for Honors in Management Science and Statistics (see page 55).
Supervised research and preparation of an honors thesis. May be repeated once for credit with advisor's approval.

Theater (THR)

Department of English, College of Liberal and Fine Arts

1013 Acting I [TCCN: DRAM 1351.]
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Fundamental techniques of acting, emphasizing the actor's approach to characterization and relationship to all parts of the play's production.

1023 Acting II [TCCN: DRAM 1352.]
(3-0) 3 hours credit. Prerequisite: Completion of the Core Curriculum requirement in literature.
Sustained character portrayal. Intensive work in stage movement and vocal techniques, including dialects.

Urban and Regional Planning (URP)

Department of Architecture, College of Architecture

4913 Independent Study
3 hours credit. Prerequisite: Permission in writing (form available) of the instructor, the student's advisor, the Department Chair, and the Dean of the College in which the course is offered.
Scholarly research under the direction of a faculty member. May be repeated for credit, but not more than 6 semester credit hours of independent study, regardless of discipline, may apply to a bachelor's degree.

4953 Special Studies in Urban and Regional Planning
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Studies may be repeated for credit when topics vary.

Women's Studies (WS)

College of Education and Human Development

2013 Introduction to Women's Studies
(3-0) 3 hours credit.
This course is an introduction to the study of women and gender using interdisciplinary and cross-cultural approaches. Designed to introduce students to the intellectual frameworks that shape thoughts about women and men. Topics may include sexuality, violence against women, feminism, and diversity in terms of race, ethnicity, age, and sexual orientation. (Formerly WGS 2013. Credit cannot be earned for both WS 2013 and WGS 2013.)

3613 Feminist Research Methodologies
(3-0) 3 hours credit.
Rigorous examination of the theory and application of feminist research methods. What are feminist research methods, and how do these methods differ from traditional research methods or "research on women"? Methods explored include: survey, interview, content analysis, experimental, oral history, case study, and action research.

3953 Special Topics in Women Writers
(3-0) 3 hours credit.
This course examines women's texts with special attention to understanding gender as a category of analysis. Variable topics may include women in the sciences, women and technology, literary and cultural representations, women and business, historical and political change, questions of class and nation, queer or transgender theories, or medical and health experiences. This class may emphasize the importance of intersecting categories of analysis including gender, race, ethnicity, and sexuality. May be repeated for credit when topics vary. (Formerly WGS 4853 and WS 4853.)

4623 Feminist Theories
(3-0) 3 hours credit. Prerequisite: WS 2013.
This course will introduce multidisciplinary explorations of theorists' attempts to describe, explain, and critique social institutions. Students will examine theoretical positions on gender and women in the study of the humanities and/or social sciences. Topics may include the ways in which women have been represented in cultural production with special consideration of race, ethnicity, class, sexuality, and nationalism. (Formerly WGS 4623. Credit cannot be earned for both WS 4623 and WGS 4623.)

4863 Feminism and Globalization
(3-0) 3 hours credit.
Theoretical, historical, and empirical analysis of how current processes of globalization are transforming the actual conditions of women's lives, labor, gender ideologies, and politics in complex and contradictory ways. Topics include feminist exploration of colonialism, capitalism, economic restructuring policies, and resistance in consumer and environmental movements.

4913 Independent Study
3 hours credit. Prerequisites: Permission in writing (form available) from the instructor, the student's advisor, the Department Chair, and Dean of the College with which the instructor is affiliated.
Independent reading, research, discussion, and/or writing under the direction of a faculty member. A maximum of 3 semester credit hours of Independent Study in Women's Studies may be applied to the Minor in Women's Studies. May be repeated for credit, but no more than 6 semester credit hours of independent study, regardless of discipline, will apply to a bachelor's degree. (Formerly WGS 4913.)

4933 Internship in Women's Studies
3 hours credit. Prerequisite: Consent of instructor.
Supervised experience relevant to Women's Studies. May be repeated once for credit, but no more than 3 semester credit hours will apply to the Women's Studies major. (Formerly WGS 4933.)

4953 Special Topics in Women's Studies
(3-0) 3 hours credit.
This course offers an examination of an individual topic or set of issues in Women's Studies. May be repeated for credit when topics vary. (Formerly WS 3713.)

4973 Seminar in Women's Studies
(3-0) 3 hours credit. Prerequisite: 12 upper-division semester credit hours in Women's Studies.
This undergraduate seminar, limited to Women's Studies majors in their senior year, offers the opportunity to study a special topic, issue, author, or period in Women's Studies. May be repeated once for credit when topics vary.

4993 Honors Thesis
3 hours credit. Prerequisite: Consent of instructor.
Supervised research and preparation of an Honors Thesis for the purpose of earning Women's Studies Honors. May be repeated once with advisor approval.

Writing Program (WRC)

Office of Undergraduate Studies

0103 Developmental Writing
(3-1) 3 hours credit.
Offers the opportunity to increase writing skills before enrollment in WRC 1013. Intensive practice in the writing process, including prewriting, drafting, organization, sentence structure, and use of grammar, spelling, and punctuation. Also includes critical reading of academic writing and introduces library research and documentation. One hour per week in The Writing Center, beyond in-class meeting time, is required. Individual teachers design activities for this additional hour. Offered on a credit/no-credit basis. Does not satisfy degree requirements. This course may be repeated.

1013 Freshman Composition I [TCCN: ENGL 1301.]
(3-0) 3 hours credit.
Focuses on academic writing. Reviews principles of the writing process, including editing for Standard American English and using and documenting sources. Introduces patterns of organization and development, summary and paraphrase, analysis, evaluation, and synthesis of multiple sources drawn from a variety of cultural and intellectual contexts. Includes extensive library research and documentation and some attention to oral and visual communication. (This course, or an equivalent, is required of all undergraduates to fulfill the Core Curriculum requirement and is typically taken during the first semester of the freshman year. WRC 1013 and WRC 1023 may not be taken concurrently.) (Formerly ENG 1013. Credit cannot be earned for both WRC 1013 and ENG 1013.)

1023 Freshman Composition II [TCCN: ENGL 1302.]
(3-0) 3 hours credit. Prerequisite: WRC 1013.
Focuses on academic writing, following the writing process, from prewriting through editing. Extensive writing practice in the use of logical and organizational patterns and introduction to persuasion in written, oral, and visual form. Develops critical and analytical skills through multidisciplinary and multicultural readings, using extensive library research and documentation. (This course, or an equivalent, is required of all undergraduates to fulfill the Core Curriculum requirement and should be taken as the continuation of WRC 1013. WRC 1013 and WRC 1023 may not be taken concurrently.) (Formerly ENG 1023. Credit cannot be earned for both WRC 1023 and ENG 1023.)

3013 Writing Strategies for the Pre-law Student
(3-0) 3 hours credit. Prerequisite: Completion of Core Curriculum requirement in rhetoric.
This writing course is designed for students planning to become attorneys. It emphasizes clear, concise writing, as well as editing conventions necessary to produce readable and correct prose, free of jargon and inflated language. It provides students with an opportunity to improve their ability to express their understanding of law and its application to fact scenarios. The course introduces organizational strategies used to identify relevant elements of facts and law appropriate to the construction of well-written arguments and documents.

4123 Topics in Writing
(3-0) 3 hours credit. Prerequisite: Consent of instructor.
Writing intensive course on various aspects of writing, such as Writing Center tutoring, scientific technical writing, legal technical writing, and writing in the disciplines. May be repeated for credit when topics vary. (Formerly WRC 3123.)

Appendices

APPENDIX A

UTSA Faculty

COLLEGE OF ARCHITECTURE

PROFESSORS

Robert M. Baron, B.Arch., University of Oregon, M.Arch., University of Washington; M.S.Arch., University of Pennsylvania
William Dupont, San Antonio Conservation Society, Endowed Professorship; A.B., Brown University; M.Arch., University of Pennsylvania
Julius M. Gribou, B. Design, University of Florida, Gainesville; M.Arch., University of Illinois at Urbana-Champaign
John D. Murphy, Jr., B.S., M.S., Ph.D., Texas A&M University
Taeg Nishimoto, B.Arch., Waseda University, Tokyo, Japan; M.Arch., Cornell University
Richard R. Tangum, B.Arch., Texas Tech University; M. Arch., Virginia Polytechnic Institute; D.E.D., Texas A&M University
Maggie Valentine, B.A., California State University, Northridge; Ph.D., University of California, Los Angeles

ASSOCIATE PROFESSORS

Mark Alan Blizard, B.Arch., M. Arch., Virginia Polytechnic Institution and State University
Edward R. Burian, B.Arch., University of Southern California, Los Angeles; M.Arch., Yale University
Vincent B. Canizaro, B.E.D., Texas A&M University; M.Arch., University of California, Berkeley; Ph.D., Texas A&M University
Yilmaz Hatipkarasulu, B.S., Cukurova University, M.S., Ph.D., Louisiana State University
Hazem Rashed-Ali, B.S., Ain Shams University, Cairo, Egypt; M.S., Oxford School of Architecture; Ph.D., Texas A&M University
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Keying Ye, B.S., Fudan University, Shanghai, China; M.S., Institute of Applied Mathematics, Academica Sinica, Beijing, China; Ph.D., Purdue University

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Anuradha Roy, B.S., Calcutta University, India; M.Stat., Indian Statistical Institute, Calcutta, India; Ph.D., Oakland University
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Kefeng Xu, B.E., Shanghai Jiao-Tong University; M.S.B.A., University of British Columbia; Ph.D., University of Maryland

ASSISTANT PROFESSOR

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Yinlong (Allen) Zhang, Bachelor of History, Renmin University of China; M.Phil., Hong Kong University of Science and Technology; Ph.D., University of Pittsburgh

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Rajesh P. Bhargave, B.B.A., The University of Texas at Austin; Ph.D., University of Pennsylvania
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Felicia Castro-Villarreal, B.A., The University of Texas at San Antonio; M.S., St. Mary's University; Ph.D., Oklahoma State University
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Lesli Biediger-Friedman, B.S., Texas Tech University; M.P.H., Benedictine University; Ph.D., Texas Tech University
Alberto Cordova, B.S., M.S., Ph.D., Texas A&M University
Jennifer Krause, B.S., Edinboro University of Pennsylvania; M.S., George Mason University; Ph.D., University of Virginia
Erica Sosa, B.A., St. Mary's University; M.S., The University of Texas at San Antonio; Ph.D., Texas A&M University

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William M. Dean, B.S., M.Ed., University of Houston; Ph.D., Texas A&M University
Curtis L. Hart, B.A., Central University of Iowa; M.S., Iowa State University; Ed.D., Oklahoma State University

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James R. Clark, B.S., Arizona State University; M.S., The University of Texas Health Science Center at Houston
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LECTURER II

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Roxanne Henkin, B.S., M.S., Ed.D., Northern Illinois University
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Miriam G. Martinez, B.A., University of Alabama; M.A., Ph.D., The University of Texas at Austin
Christine A. Moseley, B.S., Texas Tech University; M.A., Angelo State University; Ph.D., Oklahoma State University
P. Elizabeth Pate, B.S., M.Ed., Angelo State University; Ph.D., Texas A&M University
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ASSOCIATE PROFESSORS

Iliana Alanis-York, B.A., The University of Texas at Austin; M.Ed., University of Texas-Pan American; Ph.D., The University of Texas at Austin
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Kimberley Cuero, B.S., M.Ed., Ph.D., The University of Texas at Austin

Audrey Dentith, B.S., M.S., Bloomsburg University of Pennsylvania; M.Ed., Temple University; Ph.D., The Pennsylvania State University
Carmen Fies, M.S., The University of Texas at San Antonio; Ph.D., The University of Texas at Austin
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Misty Sailors, B.S., M.Ed., Ph.D., The University of Texas at Austin

ASSISTANT PROFESSORS

Maria Arreguin-Anderson, B.A., Universidad Autonoma de Nuevo Leon; M.Ed., The University of Texas-Pan American; Ed.D., Texas A&M University-Kingsville
Matthew Berland, B.A., Brown University; Ph.D., Northwestern University
Emily Bonner, B.A., M.A.T., Trinity University; Ph.D., University of Florida
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Christopher Rivera, B.S., M.A.T, Fayetteville State University; Ph.D., The University of North Carolina at Charlotte
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Jenifer Thornton, B.A., M.A., Baylor University; Ed.D., University of Houston
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Joo L. Ong, B.S., University of Iowa; M.S., Ph.D., University of Alabama at Birmingham

ASSOCIATE PROFESSOR

Ender Finol, B.S., Universidad de Carabobo, Valencia, Venezuela; M.S., University of Massachusetts, Lowell; M.A., Ph.D., Carnegie Mellon University

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Liang Tang, B.S., Jiangsu Polytechnic University, China; Ph.D., University of Louisville
Jing Yong Ye, B.S., Huazhong University of Science and Technology, China; Ph.D., University of Tsukuba, Japan

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Sazzad Bin-Shafique, B.S., Bangladesh University of Engineering and Technology at Dhaka; M.S., The University of Texas at El Paso; Ph.D., University of Wisconsin-Madison, P.E.
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ASSISTANT PROFESSORS

Samer Dessouky, B.S., Ain Shams University; M.S., Washington State University; Ph.D., Texas A&M University, P.E.
Jie Huang, B.S., M.S., Wuhan University, China; Ph.D., The University of Kansas, P.E.
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Ruoting Pei, B.S., Tianjin University, China; M.S., University of Massachusetts; Ph.D., Colorado State University, P.E.
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Mohammad Jamshidi, B.S., Oregon State University; M.S., Ph.D., University of Illinois at Urbana-Champaign
Eugene John, B.S., University of Kerala, India; M.S., The University of Texas at El Paso; Ph.D., The Pennsylvania State University
Wei-Ming Lin, B.S., National Taiwan University; M.S., Ph.D., University of Southern California
Chunjiang Qian, B.S., M.S., Fudan University, China; Ph.D., Case Western Reserve University
G.V.S. Raju, B.S., Andhra University; M.S, Banaras Hindu University; M.Tech., Indian Institute of Technology; Ph.D., Polytechnic Institute of Brooklyn
Mehdi Shadaram, B.S., University of Science and Technology, Iran; M.S., Ph.D., The University of Oklahoma

RESEARCH PROFESSOR

Amar S. Bhalla, B.S., M.S., Rajasthan University, India; Ph.D., The Pennsylvania State University

ASSOCIATE PROFESSORS

David Akopian, B.S., M.S., Moscow Institute of Physics and Technology, Russia; Ph.D., Tampere University of Technology, Finland
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Yufei Huang, B.S., Northwestern Polytechnic University, China; M.S., Ph.D., State University of New York at Stony Brook
Fred W. Hudson, B.S., Texas A&M University-Kingsville; Ph.D., The University of Texas at Austin
Yufang Jin, B.S., Zhengzhou University, China; M.S., Chinese Academy of Aviation, China; M.S., Ph.D., University of Central Florida
Bruce Smith, B.S., M.S., University of Michigan-Ann Arbor; Ph.D., University of Rhode Island

ASSISTANT PROFESSORS

Youngjoong Joo, B.S., M.S., Korea University, South Korea; Ph.D., Georgia Institute of Technology
Brian T. Kelley, B.S., Cornell University; M.S., Ph.D., George Institute of Technology
Ram Krishnan, B.Tech., Pondicherry University, India; M.S., New Jersey Institute of Technology; Ph.D., George Mason University
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Byeong Lee, B.S., M.S., Kyungpook National University, South Korea; Ph.D., The University of Texas at Austin
Bao Liu, B.S., M.S., Fudan University, China; Ph.D., University of California, San Diego
Shuo Wang, B.S., Southwest Jiaotong University, China; M.S., Zhejing University, China; Ph.D., Virginia Polytechnic Institute and State University
Jianqiu (Michelle) Zhang, B.S., Zhejiang University, China; M.S., Zhongshan University, China; Ph.D., State University of New York at Stony Brook

SENIOR LECTURER

Lars Hansen, B.S., Rice University; M.S., Stanford University; Ph.D., The University of Texas at Austin

LECTURER III

August J. Allo, Jr., B.S., M.S., Louisiana Tech University

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ASSISTANT PROFESSOR

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SENIOR LECTURER

Jason Polendo, B.S., Ph.D., The University of Texas at San Antonio

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Fatma Arslan, B.S., Bilkent University, Turkey; M.S., The University of Arizona; Ph.D., The University of Texas at San Antonio
Shuza Binzaid, B.S., M.S., Ph.D., Prairie View A&M University
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Harry R. Millwater, B.S., Rice University; M.S., Ph.D., The University of Texas at Austin
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Xiaodu Wang, B.S., M.S., Beijing Institute of Aeronautics and Astronautics, China; Ph.D., Yokohama National University, Japan

ASSOCIATE PROFESSORS

Yusheng Feng, B.S., Tsinghua University; M.S., The University of Oklahoma; Ph.D., The University of Texas at Austin
Randall D. Manteufel, B.S., M.S., The University of Texas at Austin; Ph.D., Massachusetts Institute of Technology
Brent Nowak, B.S., University of Illinois; M.S., Illinois Institute of Technology; Ph.D., The University of Texas at Austin
Can Saygin, B.S., M.S., Ph.D., Middle East Technical University, Ankara, Turkey

ASSISTANT PROFESSORS

Kiran Bhaganagar, B.S., Osmania University; Ph.D., Cornell University
Zhi-Gang Feng, B.S., Shanghai Jiaotong University; M.S., Ph.D., Tulane University
John Foster, B.S., M.S., Texas Tech University; Ph.D., Purdue University
Hung-Da Wan, B.S., M.S., National Taiwan University; Ph.D., Virginia Polytechnic Institute and State University
Xiaowei Zeng, B.E., M.S., Huazhong University of Science and Technology, China; M.S., Ph.D., The George Washington University

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Antonio Campo, B.Sc., Universidad de Puerto Rico; M.Sc., Universidad de Puerto Rico; M.Eng., Ph.D., Texas A&M University
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Jerry K. Jacka, B.A., University of Washington; M.A., University of Alaska at Fairbanks; Ph.D., University of Oregon
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M. Kathryn Brown, B.A., Southwest Texas State University; M.A., The University of Texas at Antonio; M.A., Ph.D. Southern Methodist University
Michael L. Cepek, B.A., University of Illinois at Urbana-Champaign; M.A., Ph.D., University of Chicago
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Constance A. Lowe, B.F.A., Southern Methodist University; M.F.A., Western Michigan University
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Kent T. Rush, B.F.A., California College of Arts and Crafts; M.A., The University of New Mexico; M.F.A., The University of Texas at Austin
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Richard Martinez, B.F.A., Southern Oregon University, Ashland; M.F.A., University of California, Davis
Scott Sherer, B.A., Yale University; M.A., University of Kentucky, Lexington; Ph.D., University of Minnesota, Minneapolis

ASSISTANT PROFESSORS

Teresa Eckmann, B.A., University of Massachusetts; Ph.D., University of New Mexico
Julie Johnson, B.A., Northern Illinois University; M.A., University of Iowa; Ph.D., University of Chicago
Elizabeth Rowe, B.F.A., University of Northern Iowa; M.F.A., Syracuse University

SENIOR LECTURERS

Meredith H. Dean, B.F.A., M.F.A., Washington University School of Fine Arts
Sara Frantz, B.A., University of Wisconsin-Madison; M.F.A., The University of Texas at Austin
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LECTURER II

Stacy Berlfein, B.F.A., The University of Texas at Austin; M.F.A., The University of Texas at San Antonio
Logan Blanco, B.F.A., The University of Texas at San Antonio; M.F.A., Pennsylvania Academy of the Fine Arts
Sabra Booth, B.F.A. University of Houston; M.F.A., Cranbrook Academy of Art
Justin Boyd, B.F.A., The University of Texas at San Antonio; M.F.A., California Institute of the Arts
Gerardo Cabrera, B.F.A., Texas State University San Marcos; M.F.A., The University of Texas at San Antonio
Garry Graybill, B.F.A., The University of North Texas; M.F.A., The University of Texas at Austin
April Harms, B.F.A., M.F.A., The University of Texas at San Antonio
Gayle Janzow, B.F.A. University of Idaho,; M.F.A., The University of Texas at San Antonio
Julie Landois, B.F.A., The University of Texas at San Antonio; M.F.A., University of Pennsylvania
Lawrence Leissner, B.F.A., San Francisco Art Institute; M.F.A., The University of Texas at San Antonio
Clay McClure, B.F.A., Texas State University San Marcos; M.F.A., The University of Texas at San Antonio
Juan de Dios Mora, B.F.A., B.A., M.F.A., The University of Texas at San Antonio
Catherine Pell, B.A., Rhode Island School of Design; M.F.A., The University of Texas at San Antonio
Jessica Ramirez, B.F.A., The University of Houston, M.F.A., The University of Texas at San Antonio, TX
Guillermo Sanchez, B.FA., M.F.A., The University of Texas at San Antonio
Katharine D. Scherff, B.A., M.A., The University of Texas at San Antonio
Robert Hills Snyder, B.F.A., M.F.A., The University of Texas at San Antonio
Ty Wilcox, B.F.A., Southwest Texas State University; M.F.A., The University of North Texas

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Ali Kanso El-Ghori, B.A., Lebanese University; M.S., Ph.D., Ohio University

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Sara DeTurk, B.A., University of Virginia; M.Ed., University of Massachusetts-Amherst; Ph.D., Arizona State University
Christopher Hajek, B.A., Loyola University; M.A., University of Hawaii; Ph.D., University of California, Santa Barbara
Kimberly Kline, B.A., Kennesaw State University; M.O.C., Georgia State University; Ph.D., University of Georgia
H. Paul LeBlanc III, B.A., St. Mary's University; M.A., Louisiana State University; Ph.D., Southern Illinois University
Steven R. Levitt, B.A., Montana State University; M.A., West Virginia University; Ph.D., The Ohio State University
Viviana Rojas, B.A., M.A., Universidad de Chile; Ph.D., The University of Texas at Austin

ASSISTANT PROFESSORS

Renee Cowan, B.S., The University of Texas at Austin; M.A., Texas State University-San Marcos; Ph.D., Texas A&M University
Karen Daas, B.A., Gustavus Adolphus College; M.A., Minnesota State University; Ph.D., University of Nebraska, Lincoln
Seok Kang, B.A., Sungkyunkwan University, Seoul, Korea; M.A., Sogang University, Seoul, Korea; M.A., Illinois State University; Ph.D., University of Georgia
Charles "Chad" Mahood, B.A., M.A., The Pennsylvania State University; Ph.D., University of California, Santa Barbara
Juyan Zhang, B.L., Renmin University of China; M.L., Beijing University; Ph.D. University of Missouri-Columbia

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Quinton D. Davis, B.A., Sacramento State College; M.A., University of Northern Colorado
Roy H. Eno, B.A., M.A., Trinity University
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Debbie Menger, B.A., The University of Texas at Austin; M.A., University of the Incarnate Word

LECTURER III

Kenneth Harris, B.A., Western Kentucky University; M.Div., Mid-America Baptist Theological Seminary; Ph.D., Indiana University

LECTURER II

Laura Oliver, B.A., Texas A&M University; M.A., University of North Texas

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Art Settles, B.S., M.S., Texas A&I University
Richard West, B.A., Morris Harvey College; M.A., Sangamon State University
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Norma E. Cantú, B.S., M.S., Texas A&I University; Ph.D., University of Nebraska
Bridget A. Drinka, B.A., University of Illinois; M.S., Georgetown University; Ph.D., The University of Texas at Austin
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Sonja Lanehart, B.A., The University of Texas at Austin; M.A., Ph.D., University of Michigan
Bonnie K. Lyons, B.A., M.A., Ph.D., Tulane University
Joycelyn K. Moody, B.A., Spring Hill College; M.A., University of Wisconsin, Madison; Ph.D., University of Kansas
Jeanne C. Reesman, B.A., Centenary College of Louisiana; M.A., Baylor University; Ph.D., University of Pennsylvania
Sonia Saldívar-Hull, B.A., University of Houston; M.A., Ph.D., The University of Texas at Austin
Linda T. Woodson, B.S., Ph.D., Texas Christian University

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Sue Hum, B.A., Park College; Ph.D., Texas Christian University
Catherine Kasper, B.A., University of Illinois at Urbana-Champaign; M.A., University of Illinois at Chicago; Ph.D., University of Denver
Ben Olguín, B.A., University of Houston; M.A., Ph.D., Stanford University

ASSISTANT PROFESSORS

Mark A. Bayer, B.A. (Hons), Queen's University; M.A., McGill University; Ph.D., The Ohio State University
Kinitra Brooks, B.A., Xavier University of Louisiana; M.A., Tulane University; Ph.D., The University of North Carolina at Chapel Hill
Crystal Colombini, B.A., University of Oregon; M.A., Ph.D., University of Nevada, Reno
Annette Portillo, B.A., University of California, San Diego; M.A., Ph.D., Cornell University
David Ray Vance, B.A., The University of Texas at Austin; M.A., University of Illinois at Chicago; Ph.D., University of Houston

SENIOR LECTURERS

Karen Dodwell, B.A., M.A., Ph.D., University of Houston
Ralph Millis, B.A., University of Southern Mississippi; M.A., Florida State University; Ph.D., University of Iowa

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PROFESSORS

Félix D. Almaráz, Jr., B.A., M.A., St. Mary's University; Ph.D., University of New Mexico
Steven R. Boyd, B.A., Claremont Men's College; M.A., Ph.D., University of Wisconsin-Madison
Bruce C. Daniels, A.B., Syracuse University; M.A., Ph.D., University of Connecticut
Brian L. Davies, B.A., M.A., Ph.D., University of Chicago
Dwight F. Henderson, B.A., M.A., Ph.D., The University of Texas at Austin
David R. Johnson, B.A., University of Illinois; M.A., Ph.D., University of Chicago
John F. Reynolds, B.A., M.A., Michigan State University; Ph.D., Rutgers University
Ricardo Romo, B.S., The University of Texas at Austin; M.A., Loyola Marymount University; Ph.D., University of California, Los Angeles

ASSOCIATE PROFESSORS

Antonio Calabria, A.B., Brown University; M.A., Ph.D., University of California, Berkeley
Kirsten Gardner, B.A., Georgetown University; M.A., Ph.D., University of Cincinnati
Rhonda Gonzales, B.A., M.A, Ph.D., University of California, Los Angeles
Gabriela Gonzalez, B.S., The University of Texas at Austin; M.A., The University of Texas at San Antonio; M.A., Ph.D., Stanford University

Kolleen M. Guy, B.A., North Central College; M.A., Northern Illinois University; Ph.D., Indiana University
Anne Hardgrove, B.A., Carleton College; Ph.D., University of Michigan
Patrick J. Kelly, B.A., The University of Texas at Austin; Ph.D., New York University
Gregg Michel, B.A., University of Chicago; M.A., Ph.D., University of Virginia
Wing Chung Ng, B.A., M.Phil., University of Hong Kong; Ph.D., University of British Columbia
Catherine Nolan-Ferrell, B.A., Cornell University; M.A., Tulane University; Ph.D., The University of Texas at Austin
James C. Schneider, B.A., St. Lawrence University; M.A., Ph.D., University of Wisconsin-Madison

ASSISTANT PROFESSORS

Jerry B. Gonzalez III, B.A., California State University, Fullerton; M.A., Ph.D., University of Southern California
LaGuana K. Gray, B.A., University of Houston; M.A., Louisiana Tech University; Ph.D., University of Houston

SENIOR LECTURERS

Marian Aitches, B.A., M.A., Ph.D., University of North Texas
Luis Murillo, B.A., Hamilton College; M.A., George Washington University; Ph.D., University of California, San Diego
William R. Sutton, B.A., The University of Texas at Austin; M.A., Ph.D., Louisiana State University
Patricia Thompson, B.A., Trinity University; M.A., The University of Texas at San Antonio; Ph.D., The University of Texas at Austin

LECTURER III

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Astrid Cardona, B.S., Universidad de Antioquia, Colombia; Ph.D., The University of Texas Health Science Center at San Antonio
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Ghezai Musie, B.S., Asmara University, Asmara, Eritrea; M.S., Sam Houston State University; Ph.D., Texas A&M University

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Orkid Coskuner-Weber, B.S., M.S., Ph.D., Universität zu Köln, Germany
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Raymond R. Sadeghi, B.S., The University of Texas at Austin; M.S., Ph.D., University of Colorado at Boulder
Maogen Zhang, B.S., M.S., Shandong University; Ph.D., Zhejiang University
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Rajendra V. Boppana, B.Tech., University of Mysore; M.Tech., Indian University of Technology; Ph.D., University of Southern California
Anthony T. Chronopoulos, B.S., University of Athens, Greece; M.S., University of Minnesota; Ph.D., University of Illinois
Daniel A. Jiménez, B.S., M.S., The University of Texas at San Antonio; Ph.D., The University of Texas at Austin
Kay A. Robbins, S.B., Ph.D., Massachusetts Institute of Technology
Steve Robbins, S.B., S.M., Ph.D., Massachusetts Institute of Technology
Ravi Sandhu, B.Tech., Indian Institute of Technology, Bombay; M.Tech., Indian Institute of Technology, New Delhi; M.S., Ph.D., Rutgers University

ASSOCIATE PROFESSORS

Thomas C. Bylander, B.S., University of South Dakota; M.S., Ph.D., The Ohio State University
Turgay Korkmaz, B.S., Hacettepe University, Ankara, Turkey; M.S., Bilkent University, Ankara, Turkey; M.S., Syracuse University; Ph.D., University of Arizona
Hugh B. Maynard, B.S., California Institute of Technology; M.S., Ph.D., University of Colorado at Boulder
Jianwei Niu, B.Sc., M.Sc., Jilin University, Changchun, P.R. China; Ph.D., University of Waterloo, Canada
Qi Tian, B.E., Tsinghua University, Beijing, China; M.S., Drexel University; Ph.D., University of Illinois at Urbana-Champaign
Ali S. Tosun, B.S., Bilkent University, Ankara, Turkey; M.S., Ph.D., The Ohio State University
Jeffery von Ronne, B.S., Oregon State University; M.S., Ph.D., University of California, Irvine
Carola Wenk, M.Sc., Ph.D. Freie Universität Berlin, Germany
R. Clint Whaley, B.S., Oklahoma State University, Goodwell; M.S., The University of Tennessee, Knoxville; Ph.D., Florida State University
Greg B. White, B.S., Brigham Young University; M.S., Air Force Institute of Technology; Ph.D., Texas A&M University, College Station
Shouhuai Xu, Ph.D., Fudan University, Shanghai, P.R. China
Qing Yi, B.S., Shandong University, P.R. China; M.S., Institute of Computing Technology, Chinese Academia Cinica, P.R. China; M.S., Ph.D., Rice University
Weining Zhang, B.Engr., University of Electronic Science and Technology of China, Chengdu, P.R. China; M.S., Ph.D., University of Illinois at Chicago
Daikai Zhu, B.E., Xi'an Jiaotong University, Xi'an Shanxi, P.R. China; M.E., Tsinghua University, Beijing, P.R. China; M.S., Ph.D., University of Pittsburgh

ASSISTANT PROFESSORS

John Quarles, B.S., The University of Texas at Austin; M.S., Ph.D., University of Florida
Jianhua Ruan, B.S., University of Science and Technology of China, Hefei, China; M.S., California State University, San Bernardino; Ph.D., Washington University in St. Louis
Macneil Shonle, B.A., Clark University; M.S., Ph.D., University of California, San Diego

DEPARTMENT OF GEOLOGICAL SCIENCES

PROFESSOR

Lance L. Lambert, B.S., M.S., Texas A&M University; Ph.D., University of Iowa

ASSOCIATE PROFESSORS

Stuart J. Birnbaum, B.S., State University of New York at Stony Brook; Ph.D., Cambridge University
Alan R. Dutton, B.A., University of Rochester; Ph.D., The University of Texas at Austin
Judith K. Haschenburger, B.S., University of Nebraska at Kearney; M.A., Arizona State University; Ph.D., University of British Columbia
Hongjie Xie, B.S., East China Institute of Technology; M.S., Beijing Research Institute of Uranium Geology and China University of Geosciences, Beijing; Ph.D., The University of Texas at El Paso

ASSISTANT PROFESSORS

Marina B. Suarez, B.S., Trinity University; M.S., Temple University; Ph.D., The University of Kansas
David J. Young, B.S., M.S., Monash University; Ph.D., University of California, Santa Barbara

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Manuel P. Berriozábal, B.S., Rockhurst College; M.S., University of Notre Dame; Ph.D., University of California, Los Angeles
Youn-Min Chou, B.S., National Taiwan University; M.S., The University of Texas at El Paso; Ph.D., Southern Methodist University
Dung Le, B.S., University of Saigon, Vietnam; Diploma in Mathematics, International Center for Theoretical Physics, Italy; Ph.D., Arizona State University
Gelu F. Popescu, B.S., University of Timisoara; M.S., University of Bucharest; Ph.D., Texas A&M University
Walter B. Richardson, Jr., B.S., Southwest Texas State University; M.S., University of Houston; Ph.D., University of North Texas
Nikos A. Salingaros, B.S., University of Miami; M.A., Ph.D., State University of New York at Stony Brook
Lucio Tavernini, B.S.E.E., Heald Engineering College; M.S., University of Colorado at Boulder; M.S., Ph.D., University of Wisconsin-Madison
Betty S. P. Travis, B.A., M.S., St. Mary's University; Ph.D., The University of Texas at Austin
Gregory P. Wene, B.A., M.A., The University of Texas at Austin; Ph.D., University of Iowa
Lawrence R. Williams, B.S., Texas Southern University; M.A., Ph.D., University of Michigan
Raj Wilson, B.S., M.S., University of Madras, India; Ph.D., Stevens Institute of Technology, New Jersey

ASSOCIATE PROFESSORS

Weiming Cao, B.Sc., Nanjing University, China; M.Sc., Ph.D., Shanghai University of Science and Technology, China
Oscar Chavez, B.S., Universidad Nacional Autónoma de México; M.S., Ph.D., University of Missouri-Columbia
Fengxin Chen, B.S., Hangzhou University, China; M.S., Yunnan University, China; Ph.D., Brigham Young University
Eduardo Dueñez, B.Sc., University of Guanajuato, Mexico; M.S., Ph.D., Princeton University
Dmitry Gokhman, B.S., University of Miami; Ph.D., University of California, Berkeley
José N. Iovino, B.A., M.S., Universidad de los Andes, Columbia; Ph.D., University of Illinois at Urbana-Champaign
F. Alexander Norman, B.A., University of Virginia; M.A., Ed.D., The University of Georgia

SENIOR LECTURERS

Armando Arciniega, B.A., M.A., Eastern New Mexico University; Ph.D., Texas Tech University
Maurice Burke, B.S., B.A., Montana State University; B.A., Oxford University, UK; M.S., Ph.D., University of Wisconsin-Madison
Chen Chang, Ph.D., University of Miami
Carol Dyas, Ph.D., The University of Texas at Austin
Ivanka Stamova, M.S., University of Plovdiv, Bulgaria; Ph.D., D.Sc., Higher Accreditation Commission of Bulgaria

LECTURER III

Chaitanya Agrawal, M.S., Meerut University, India
Michael Judy, B.A., Beloit College; M.A., Loyola University-Chicago
Richard Travis, M.S., Texas A&M University

LECTURER II

Ronald Brashear, M.A., Sam Houston State University
Danielle Lyles, B.S., The University of Texas at San Antonio; M.S., Ph.D., Cornell University
Gary Middleton, M.S., Texas A&I University

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Sean Beatty, B.S., M.S., The University of Texas at San Antonio
Jaromar Becan, M.S., Tulane University
Alvino Cortez, M.S., The University of Texas at San Antonio
Shannon Creager, B.A., M.A., San Francisco State University
Edward Esparza, M.S., The University of Texas at San Antonio
David Fies, M.S., The University of Texas at San Antonio
Igor Halfin, M.A., University of the Ukraine; M.S., The University of Texas at San Antonio
Jennifer Jacobson, B.S., University of Alabama at Birmingham; M.S., Georgia Institute of Technology
Esmarie Kennedy, M.S., The University of Texas at San Antonio
Ghassan Nasr, B.S., M.S., The University of Texas at San Antonio
Cynthia Roberts, B.S., University of Houston-Victoria; M.S.; The University of Texas at Austin
Gary Wright, B.S., M.S., University of Tennessee; Ph.D., Texas A&M University

DEPARTMENT OF PHYSICS AND ASTRONOMY

PROFESSORS

Arturo A. Ayon, B.S., Universidad de Guadalajara, Mexico; M.S., Ph.D., Cornell University
Chonglin Chen, B.S., Huachiao University, P.R. China; M.S., Chinese Academy of Sciences, P.R. China; M.S., Ph.D., The Pennsylvania State University
Liao Y. Chen, B.S., Xingyang Normal College, Henan; M.S., Huazhong University of Science Technology, Wuhan; Ph.D., Academia Sinica, Beijing
Patrick L. Nash, B.S., University of Arizona; Ph.D., University of North Carolina at Chapel Hill
Dhiraj K. Sardar, B.S., M.S., University of Calcutta, India; Ph.D., Oklahoma State University
Eric M. Schlegel, B.S.(2), State University of New York at Albany; Ph.D., Indiana University, Bloomington
Miguel Jose Yacaman, B.Sc., M.Sc., Ph.D., National University of Mexico (UNAM), Mexico City

ASSOCIATE PROFESSORS

Lorenzo Brancaleon, B.S., Ph.D., University of Parma, Italy
Andrey Chabanov, M.S., Kharkov State University, Ukraine; D.Sc., Ukranian Academy of Sciences, Ukraine; Ph.D., City University of New York
Zlatko G. Koinov, M.S., University of Sofia, Bulgaria; Ph.D., D.Sc., St. Petersburg Electrotechnical University, Russia

ASSISTANT PROFESSORS

Xochitl Lopez-Lozano, B.S., M.S., Ph.D., University of Puebla, Mexico
Marcelo Marucho, M.S., University of Buenos Aires; Ph.D., National University of La Plata
Kelly Nash, B.S., Dillard University; M.S., University of Michigan-Ann Arbor; Ph.D., The University of Texas at San Antonio
Xomalin G. Peralta, B.S., National University of Mexico (UNAM), Mexico City; M.S., Ph.D., University of California, Santa Barbara

ADJOINT PROFESSORS

Matthew J. Benacquista, B.A., Reed College; Ph.D., Montana State University
Teviet D. Creighton, B.S., University of Calgary, Alberta; Ph.D., California Institute of Technology
Mario Diaz, M.S., Ph.D., University of Cordoba, Cordoba, Argentina
Phillip Dukes, B.S., Ph.D., Brigham Young University
Natalia V. Guevara, B.S., Ph.D., Moscow State University
Andreas Hanke, Ph.D., University of Munich (LMU), Germany
Fredrick Jenet, S.B., Massachusetts Institute of Technology; Ph.D., California Institute of Technology
Stefano Livi, B.S., Universita' degli Studi di Firenze
Karen Martirosyan, M.S., Ph.D., Institute of Structural Macrokinetics, Russian Academy of Science and State Engineering University of Armenia
David McComas, B.S., Massachusetts Institute of Technology; M.S., Ph.D., University of California, Los Angeles
Soumya D. Mohanty, B.S., M.S., Delhi University, India; Ph.D., Inter-University Centre for Astronomy and Astrophysics, Pune, India
Soma Mukherjee, B.S., M.S., Ph.D., University of Calcutta, India
Craig Pollock, A.A., Hudson Valley Community College; B.A., Sienna College; Ph.D., University of New Hampshire
Richard H. Price, B.S., Cornell University; Ph.D., California Institute of Technology
Volker M. Quetschke, B.S., M.S., Ph.D., Universitat Hannover, Germany
Malik Rakhmanov, B.S., Moscow State University; Ph.D., California Institute of Technology
Joseph D. Romano, B.S., Cornell University; M.S., Ph.D., Syracuse University
Marilia Samara, B.A., Boston University; Ph.D., Dartmouth College
Ahmed Touhami, B.S., M.S., Ph.D., Pierre & Marie Curie University, Paris VI, France
J. Hunter Waite, B.S., University of Alabama, Tuscaloosa; M.S., Ph.D., University of Michigan-Ann Arbor

ADJOINT ASSOCIATE PROFESSORS

Daniel C. Boice, B.S., Brigham Young University; M.S., Ph.D., New Mexico State University, Las Cruces
Mihir Desai, B.Sc., University of London, United Kingdom; Ph.D., University of Birmingham, United Kingdom

ADJOINT ASSISTANT PROFESSORS

Frédéric Allegrini, B.S., Vaud School of Engineering, Switzerland; M.S., University of Lausanne, Switzerland; Ph.D., University of Bern, Switzerland
Jerry Goldstein, B.S., Brooklyn College; Ph.D., Dartmouth College
Jörg-Micha Jahn, M.S., Ludwig-Maximilans-Universität München, Germany; Ph.D., Dartmouth College
Philip Valek, B.S., Illinois State University; M.S., Ph.D., Auburn University

ADJUNCT PROFESSORS

Robert E. Clark, B.S., Frostburg State College; M.S., Ph.D., Pennsylvania State University
Vladimir Gorokhovsky, M.S., Novosibirsk State University, Russia; Ph.D., Russian Academy of Sciences, Russia

PROFESSORS OF RESEARCH

John B. Gruber, B.S., Haverford College; Ph.D., University of California, Berkeley
Necip Guven, B.S., Ph.D., Georg-August University of Gottingen

SPECIALIST

Larry Tankersley, B.A., Rice University; M.S., Ph.D., Stanford University

SENIOR LECTURERS

Ichishiro Konno, B.A., Miyagi University of Education, Japan; M.S., Bowling Green State University; Ph.D., Arizona State University
Aneta Koynova, M.S., St. Kliment Ohridski University, Bulgaria; Ph.D., Ioffe Physico-Technical Institute, Russia
Rafael López-Mobilia, B.S., Pontificia Universidad Católica del Perú, Lima; M.S., University of Notre Dame; Ph.D., The University of Texas at Austin

LECTURER II

Robert D. Hamby, B.S., M.S., Southwest Texas State University

LECTURER I

Christopher Dunn, B.S., M.S., University of Texas at San Antonio
James Powell, M.S., Naval Postgraduate School

COLLEGE FACULTY

ASSOCIATE PROFESSOR

Janis K. Bush, B.S., M.S., The University of Texas at San Antonio; Ph.D., The University of Texas at El Paso

WRITING PROGRAM

SENIOR LECTURERS

Diane Abdo, B.A. St. Mary's University; M.A., The University of Texas at San Antonio
Christine Caver, B.A., The University of Texas at San Antonio; M.A., Ph.D., The University of Texas at Austin
Gail Pizzola, B.A., Fitchburg State College; M.A., Clark University; Ph.D., Indiana University of Pennsylvania

LECTURER III

Janet Fetzer, B.A., M.A., The University of Texas at San Antonio
John Helton, B.A., The University of Texas at Austin; M.F.A., Southwest Texas State University (now Texas State University-San Marcos)
Gaylynne Robinson, B.A., The University of Texas at San Antonio; M.A., St. Mary's University
Steve Swellander, B.A., The University of Texas at Austin; M.A., Trinity University
Paula Tran, B.A., St. Mary's University; M.A., Southwest Texas State University (now Texas State University-San Marcos)
Deanna White, B.S., M.A., East Tennessee State University
Robert Wilhite, B.A., M.A., The University of North Carolina at Chapel Hill

LECTURER II

Robin English-Bircher, B.A., The University of Texas at San Antonio; M.A., Texas State University-San Marcos
Christina Frasier, B.A., Stephen F. Austin State University; M.A., University of Louisiana at Lafayette
Mark Gifford, B.A., Baylor University; M.A., The University of Texas at San Antonio
Manjit Kaur, B.A., M.A., Panjab University, Chandigarh, India
Melissa Leath, B.A., M.A., Southwest Texas State University (now Texas State University-San Marcos)
John Lee, B.A., Pittsburg State University; M.A., St. Mary's University
Brooke Lopez, B.A., The University of Texas at San Antonio; M.A., University of North Texas
Alyson Martin, B.A., The University of Texas at Austin; M.A., University of the Incarnate Word
Eva Pohler, B.A., Trinity University; M.A., St. Mary's University; Ph.D., Texas Tech University
Lindsay Ratcliffe, B.A., Grove City College; M.A., The University of Texas at San Antonio
Samuel Robertson, B.A., McMurry University; M.A., Hardin-Simmons University; Ph.D., The University of Texas at Austin
Rose Rodriguez-Rabin, B.A., M.A., Texas A&M International University
Dixie Shaw-Tillmon, B.A., University of Houston; M.A., Sam Houston State University
Martha Smith, B.A., The University of Texas at Austin; M.A., College of William and Mary
Amanda Williams, B.A., The University of Texas at San Antonio; M.A., University of North Texas

LECTURER I

Josh Beach, B.A., M.A., M.A.I.S., Oregon State University; M.A., University of California, Riverside
Tim Braun, B.S., Ball State University; M.A., University of New Mexico; M.F.A., Columbia University's School of the Arts
Robyn Glasscock, B.A., M.A., The University of Texas at San Antonio
William Michael Goins, M.A., Antioch University
Nancy Hall, B.A., M.A., Our Lady of the Lake University
Amy Hauck, B.A., Sam Houston State University; M.A., The University of Texas at San Antonio
Gregory Hazleton, B.A., B.J., University of Missouri; M.A., Ph.D., Washington University in St. Louis
Maike Hudson, M.A., University of Osnabrueck, Germany
Karen Jensen, B.A., University of the Incarnate Word; M.A., The University of Texas at San Antonio
Kenneth Johnston, M.A., University of Idaho; M.F.A., Texas State University-San Marcos
Philip Jones, B.A., M.A., University of Houston
Santiago (Jim) Longoria, B.A., M.A., The University of Texas at San Antonio
Leticia Medina, B.A., The University of Texas at San Antonio; M.A., St. Mary's University
Darren Meritz, B.A., M.A., St. Mary's University
Michelle Pina-Theall, B.A., M.A., St. Mary's University
Alvin Ronnfeldt, B.A., M.A., The University of Texas at San Antonio
Michael Simons, B.A., The University of North Carolina at Greensboro; M.F.A., Cornell University
Jacqueline Sundol, B.S., M.A., Northern Michigan University
Ellen Walroth, B.S., M.S., M.B.A., University of Miami
Michael Willard, B.A., The University of Texas at Austin; M.A., CUNY City College
Cynthia Williams, M.A., The University of Texas at Austin
Ryan Wilson, B.A., M.A., The University of Texas at San Antonio
Todd Wright, B.A., Texas Lutheran University; M.A., Kansas State University; M.F.A., New School for Social Research

APPENDIX B

Texas Common Course Numbering System

UTSA is a participant in the Texas Common Course Numbering (TCCN) System. A standard set of four-character abbreviations for academic disciplines and four-digit course numbers, this system aids in the transfer of lower-division academic courses among colleges and universities in Texas. The first digit of the number represents the academic level of the course (0 for subfreshman, 1 for freshman, and 2 for sophomore); the second represents the semester credit hours value of the course. Most community colleges in Texas have adopted TCCN as their course numbering system; others cross-reference their courses with TCCN.

The table below lists TCCN course designation and their UTSA equivalents. UTSA courses are designated by four-digit numbers following a two- or three-letter abbreviation of the academic discipline. The first digit indicates the level of the course (0 are developmental education courses, 1 and 2 are lower-division). The second and third digits are used within the colleges by each department to distinguish individual courses. The fourth digit indicates the semester-credit-hour value of each course.

Core curriculum courses that do not have a Texas Common Course Number (TCCN) have been assigned an "acceptable substitute" TCCN. If a student completes a course bearing this number, it will be accepted as meeting the applicable core curriculum requirement. Courses with "acceptable substitute" numbers are indicated in italics in this table.

TCCN Course	UTSA Course
ACCT 2301	ACC 2013
ACCT 2302	ACC 2033
ANTH 2301	ANT 2033
ANTH 2302	ANT 2043
ANTH 2346	ANT 1013
ANTH 2351	ANT 2053
ANTH 2351 - UTSA Acceptable Substitute	*ANT 2063*
ARAB 1411	ARA 1014
ARAB 1412	ARA 1024
ARAB 2311	ARA 2013
ARAB 2312	ARA 2023
ARCH 1301	ARC 1513, ARC 2413
ARCH 1302	ARC 2423
ARCH 1303	COA 1213
ARCH 1305	ARC 1413
ARCH 1307	COA 1313
ARTS 1301	ART 1103
ARTS 1303	AHC 1113

TCCN Course	UTSA Course
ARTS 1304	AHC 1123
ARTS 1304 - UTSA Acceptable Substitute	*AHC 1133*
ARTS 1311	ART 1003
ARTS 1312	ART 1013
ARTS 1316	ART 1213
ARTS 1317	ART 1223
ARTS 1325	ART 1143
ARTS 2316	ART 2113
ARTS 2326	ART 2613
ARTS 2333	ART 2413
ARTS 2346	ART 2713
ARTS 2348	ART 2313
ASTR 1103	AST 1031
ASTR 1303	AST 1013
ASTR 1304	AST 1033
BCIS 1305	IS 1403
BIOL 1106	BIO 1122
BIOL 1306	BIO 1404
BIOL 1307	BIO 1413
BIOL 1308	BIO 1233
BIOL 1309	BIO 1243
BIOL 1322	BIO 2043
BIOL 2101	BIO 2091
BIOL 2102	BIO 2111
BIOL 2120	BIO 1061
BIOL 2301	BIO 2083
BIOL 2302	BIO 2103
BIOL 2306	ES 2013
BIOL 2316	BIO 2313
BIOL 2320	BIO 1053
CHEM 1105	CHE 1011
CHEM 1107	CHE 1021
CHEM 1111	CHE 1121
CHEM 1112	CHE 1131
CHEM 1305	CHE 1003, CHE 1033
CHEM 1305 - UTSA Acceptable Substitute	*CHE 1073*
CHEM 1307	CHE 1013
CHEM 1311	CHE 1103
CHEM 1312	CHE 1113
CHEM 2223	CHE 2612
CHEM 2323	CHE 2603

TCCN Course	UTSA Course
CHIN 1411	CHN 1014
CHIN 1412	CHN 1024
CHIN 2311	CHN 2013
CHIN 2312	CHN 2023
COMM 1307	COM 2343
COSC 1300	CS 1023
COSC 1336	CS 1063
COSC 1437	CS 1713/1711
COSC 2436	CS 2123/2121
CRIJ 1301	CRJ 1113
CRIJ 1306	CRJ 2813
CRIJ 2313	CRJ 2513
CRIJ 2328	CRJ 2213
DRAM 1351	THR 1013
DRAM 1352	THR 1023
ECON 1301	ECO 2003
ECON 2301	ECO 2013
ECON 2302	ECO 2023
ENGL 1301	WRC 1013
ENGL 1302	WRC 1023
ENGL 2311	ENG 2413
ENGL 2322	ENG 2223
ENGL 2323	ENG 2233
ENGL 2327	ENG 2263
ENGL 2328	ENG 2293
ENGL 2331 - UTSA Acceptable Substitute	*CLA 2033*
ENGL 2331 - UTSA Acceptable Substitute	*CLA 2323*
ENGL 2331 - UTSA Acceptable Substitute	*CSH 2313*
ENGL 2331 - UTSA Acceptable Substitute	*ENG 2013*
ENGL 2331 - UTSA Acceptable Substitute	*ENG 2213*
ENGL 2331 - UTSA Acceptable Substitute	*ENG 2383*
ENGL 2331 - UTSA Acceptable Substitute	*ENG 2423*
ENGL 2331 - UTSA Acceptable Substitute	*FRN 2333*
ENGL 2331 - UTSA Acceptable Substitute	*GER 2333*
ENGL 2331 - UTSA Acceptable Substitute	*ITL 2333*
ENGL 2331 - UTSA Acceptable Substitute	*RUS 2333*
ENGL 2331 - UTSA Acceptable Substitute	*SPN 2333*
ENGL 2332	IDS 2303
ENGL 2332 - UTSA Acceptable Substitute	*CSH 1103*
ENGL 2333	IDS 2313
ENGL 2333 - UTSA Acceptable Substitute	*CSH 1113*
ENGR 2301	EGR 2103
ENGR 2302	EGR 2513
ENGR 2303	EGR 2213
ENGR 2305	EE 2213
FREN 1411	FRN 1014
FREN 1412	FRN 1024

TCCN Course	UTSA Course
FREN 2303	FRN 2333
FREN 2311	FRN 2013
FREN 2312	FRN 2023
GEOG 1300	GRG 1013
GEOG 1301	GRG 2613
GEOG 1302	GRG 2623
GEOG 1303	GRG 1023
GEOL 1103	GEO 1111
GEOL 1104	GEO 1131
GEOL 1301	GEO 1013
GEOL 1303	GEO 1103
GEOL 1304	GEO 1123
GERM 1411	GER 1014
GERM 1412	GER 1024
GERM 2311	GER 2013
GERM 2312	GER 2023
GOVT 2301	POL 1013
GOVT 2302	POL 1213
GOVT 2304	POL 2533
GOVT 2306	POL 1133
GREE 2311 - UTSA Acceptable Substitute	*GRK 2113*
HECO 1307	FIN 2003
HIST 1301	HIS 1043
HIST 1302	HIS 1053
HIST 2301	HIS 2053
HIST 2312 - UTSA Acceptable Substitute	*HIS 2543*
HIST 2312 - UTSA Acceptable Substitute	*HIS 2573*
HIST 2321	HIS 2123/ IDS 2203
HIST 2322	HIS 2133/ IDS 2213
HIST 2323	HIS 2553
HIST 2323 - UTSA Acceptable Substitute	*HIS 2583*
HUMA 1301 - UTSA Acceptable Substitute	*HIS 2533*
HUMA 1302 - UTSA Acceptable Substitute	*CSH 2113*
HUMA 2319 - UTSA Acceptable Substitute	*WS 2013*
HUMA 2323	CSH 1213
ITAL 1411	ITL 1014
ITAL 1412	ITL 1024
ITAL 2311	ITL 2013
ITAL 2312	ITL 2023
JAPN 1411	JPN 1014
JAPN 1412	JPN 1024
JAPN 2311	JPN 2013
JAPN 2312	JPN 2023

TCCN Course	UTSA Course
KINE 1301	KIN 2303
KINE 1304	HTH 2513
KINE 1338	KIN 2123
LATI 1411	LAT 1114
LATI 1412	LAT 1124
LATI 2311	LAT 2113
LATI 2312	LAT 2123
MATH 1314	MAT 1023, MAT 1073
MATH 1325	MAT 1033
MATH 1332	MAT 1043
MATH 1342	STA 1053
MATH 1350	MAT 1153
MATH 1351	MAT 1163
MATH 1442	STA 1043
MATH 2312	MAT 1093
MATH 2313	MAT 1193
MATH 2318	MAT 2233
MATH 2321	EGR 2323
MATH 2342	STA 1403
MATH 2413	MAT 1214
MATH 2414	MAT 1224
MATH 2415	MAT 2214
MUSI 1162	MUS 2601
MUSI 1181	MUS 1521
MUSI 1183	MUS 1531
MUSI 1211	MUS 1112
MUSI 1212	MUS 1132
MUSI 1216	MUS 1102
MUSI 1217	MUS 1122
MUSI 1263	MUS 2132
MUSI 1286	MUS 2142
MUSI 1301	MUS 2623
MUSI 1306	MUS 2683
MUSI 1306 - UTSA Acceptable Substitute	*MUS 2663*
MUSI 1306 - UTSA Acceptable Substitute	*MUS 2673*
MUSI 1306 - UTSA Acceptable Substitute	*MUS 2693*
MUSI 1306 - UTSA Acceptable Substitute	*MUS 2743*
MUSI 1309	MUS 2243
MUSI 1310	MUS 2633
MUSI 2211	MUS 2152
MUSI 2212	MUS 2162
MUSI 2216	MUS 2102
MUSI 2217	MUS 2112
PHED 1346	BIO 1033
PHIL 1301	PHI 2013
PHIL 1304	HUM 2093
PHIL 2303	PHI 2043

TCCN Course	UTSA Course
PHIL 2306 - UTSA Acceptable Substitute	*PHI 2123*
PHIL 2316	PHI 2023
PHIL 2317	PHI 2033
PHYS 1101	PHY 1611
PHYS 1102	PHY 1631
PHYS 1103	AST 1031
PHYS 1301	PHY 1603
PHYS 1302	PHY 1623
PHYS 1303	AST 1013
PHYS 1304	AST 1033
PHYS 1310	PHY 1013
PHYS 2125	PHY 1911
PHYS 2126	PHY 1931
PHYS 2325	PHY 1903, PHY 1943
PHYS 2326	PHY 1923, PHY 1963
PSYC 2301	PSY 1013
PSYC 2314	PSY 2503
PSYC 2316	PSY 2523
PSYC 2319	PSY 2533
RUSS 1411	RUS 1014
RUSS 1412	RUS 1024
RUSS 2311	RUS 2013
RUSS 2312	RUS 2023
SGNL 1301	ASL 1013
SGNL 1302	ASL 1023
SGNL 2301	ASL 2013
SGNL 2302	ASL 2023
SOCI 1301	SOC 1013
SOCI 1301 - UTSA Acceptable Substitute	*AMS 2043*
SOCI 1301 - UTSA Acceptable Substitute	*IDS 2113*
SOCI 1306	SOC 2013
SOCI 2319 - UTSA Acceptable Substitute	*BBL 2003*
SOCI 2320 - UTSA Acceptable Substitute	*BBL 2033*
SOCI 2340	SOC 2023
SPAN 1411	SPN 1014
SPAN 1412	SPN 1024
SPAN 2311	SPN 2013
SPAN 2311 - UTSA Acceptable Substitute	*SPN 2003*
SPAN 2312	SPN 2023
SPAN 2316	SPN 2513
SPAN 2323	SPN 2333
SPAN 2324	SPN 2523
SPAN 2324 - UTSA Acceptable Substitute	*BBL 2023*
SPAN 2324 - UTSA Acceptable Substitute	*CSH 1203*
SPAN 2324 - UTSA Acceptable Substitute	*MAS 2023*

TCCN Course	UTSA Course
SPCH 1311	COM 1043
SPCH 1315	COM 2113
SPCH 1321	COM 1053
SPCH 2144	COM 2801
TECA 1303	IDS 2103
TECA 1318	HTH 2133
None	COR 1203

APPENDIX C

National Standardized Tests: Minimum Scores Required for Credit at UTSA

Students are encouraged to maximize their experience at UTSA by accessing the credit that can be received through the College Level Examination Program (CLEP), Advanced Placement (AP) program, and International Baccalaureate Examination. The following tables provide information on minimum scores required in order to receive credit at UTSA. There are University policies that may affect whether or not credit can be received through these tests. The cutoff scores displayed on these pages are valid beginning August 1, 2012. These scores and course credits are subject to change. For more information regarding credit by Examination, please review the AP, CLEP, and IB information on the Testing Services Web site: http://utsa.edu/testing/. Testing Services is located in MS 1.01.04 on the Main Campus, phone (210) 458-4125, and in BV 1.302 on the Downtown Campus, phone (210) 458-2941.

ADVANCED PLACEMENT (AP)

Subject	Test Used	Minimum Score Required for UTSA Credit	UTSA Credit Awarded*
ART	History of Art	3	AHC elective, 3 hours (lower division)
BIOLOGY	Biology	4	BIO 1404, 1413
CHEMISTRY	Chemistry	4	CHE 1103, 1121 (lab)
		5	CHE 1103, 1121 (lab) CHE 1113, 1131 (lab)
COMPUTER SCIENCE	Computer Science A	3	CS 1063
ECONOMICS	Macroeconomics	3	ECO 2013
	Microeconomics	3	ECO 2023
ENGLISH	English Literature and Composition	4	ENG 2013
	English Language and Composition	3	WRC 1013
ENVIRONMENTAL SCIENCE	Environmental Science	3	ES 2013
		4	ES 2013, 2023
FRENCH	French Language	2	FRN 1014, 1024
		3	FRN 1014, 1024, 2013, 2023, 3023
GEOGRAPHY	Human Geography	4	GRG elective, 3 hours (lower division)
GERMAN	German Language	2	GER 1014, 1024
		3	GER 1014, 1024, 2013, 2023
		4	GER 1014, 1024, 2013, 2023, 3023
		5	GER 1014, 1024, 2013, 2023, 3023 GER electives, 6 hours (upper division)
HISTORY	United States History	3	HIS 1043, 1053
	European History	3	HIS 2563
	World History	3	HIS 2123 or HIS 2133 IDS 2203 or IDS 2213 **
JAPANESE	Japanese Language	2	JPN 1014, 1024
		3	JPN 1014, 1024, 2013, 2023

ADVANCED PLACEMENT (AP)

Subject	Test Used	Minimum Score Required for UTSA Credit	UTSA Credit Awarded*
MATHEMATICS	Calculus AB	4	MAT 1214
	Calculus BC	3 4	MAT 1214 MAT 1214, 1224
	Statistics	3	STA 1043 or 1053 ***
PHYSICS	Physics B	4	PHY 1603, 1623
	Physics C a. Mechanics b. Electricity & Magnetism	 4 4	 PHY 1903 PHY 1923
POLITICAL SCIENCE	Government and Politics US	3	POL 1013#
PSYCHOLOGY	Psychology	3	PSY 1013
SOCIAL SCIENCES	Please refer to History		
SPANISH	Spanish Language	2 3 4	SPN 1014, 1024 SPN 1014, 1024, 2013, 2023 SPN 1014, 1024, 2013, 2023 SPN elective, 3 hours (upper division)
	Spanish Literature	3	SPN Literature elective, 3 hours (upper division)

* All credit shown in this table as elective credit is lower division unless otherwise indicated.
** Credit will be given for either HIS 2123, HIS 2133, IDS 2203, or IDS 2213, but not for all.
*** Credit will be given for either STA 1043 or STA 1053, but not for both.
# This credit is earned after completion of POL 1133 (Texas Politics and Society). Any substitutions or equivalencies allowed by an advisor will not be the responsibility of Testing Services.

COLLEGE LEVEL EXAMINATION PROGRAM (CLEP)

Subject	Test Used	Minimum Score Required for UTSA Credit	UTSA Credit Awarded*
BIOLOGY	Biology	65	BIO 1233, 1243
BUSINESS	Financial Accounting	60	ACC 2013
	Introductory Business Law	50	BLW 3013
	Principles of Management	50	MGT 3013
	Principles of Marketing	50	MKT 3013
CHEMISTRY	Chemistry	58 68	CHE 1103, 1121 (lab) CHE 1103, 1121 (lab) CHE 1113, 1131 (lab)
COMPUTER SCIENCE	Information Systems and Computer Applications	50 57	CS 1033 IS 3003
	This examination is the same for both credit granting areas. The score determines which credit is awarded. Credit cannot be used for both IS and CS. Students having earned course credit for IS 3003 cannot earn test credit for CS 1033.		
ECONOMICS	Principles of Macroeconomics	50	ECO 2013
	Principles of Microeconomics	50	ECO 2023

COLLEGE LEVEL EXAMINATION PROGRAM (CLEP)

Subject	Test Used	Minimum Score Required for UTSA Credit	UTSA Credit Awarded*
ENGLISH	College Composition Modular with Essay	50+ 63+	WRC 1013 WRC 1013, 1023
	American Literature	63	ENG 2263, 2293
	English Literature	63	ENG 2223, 2233
	Analyzing and Interpreting Literature with Essay	63 63+	ENG 2013 ENG 2213
	+with "pass" on essay scored by English Department Faculty		
FRENCH	College Level French Language	43 50 56 62	FRN 1014 FRN 1014, 1024 FRN 1014, 1024, 2013 FRN 1014, 1024, 2013, 2023
	Diplome d'Etudes en Langue Francaise** ***For details, contact the Department of Modern Languages and Literatures, (210) 458-4373.*	Unitè A1 Unitè A1, A2 Premier Degrè Unitès A1, A2, A3, A4	FRN 1014 FRN 1014, 1024 FRN 1014, 1024 FRN 2013, 2023
GERMAN	College Level German Language	43 50 56 63	GER 1014 GER 1014, 1024 GER 1014, 1024, 2013 GER 1014, 1024, 2013, 2023
HEALTH	Human Growth and Development	50	HTH 3543
HISTORY	History of the United States I	50	HIS 1043
	History of the United States II	50	HIS 1053
MATHEMATICS	College Mathematics	50	MAT elective, 3 hours (lower division)
	College Algebra	50	MAT 1073
	Precalculus	50	MAT 1093
	Calculus	50	MAT 1214
NATURAL SCIENCES	Natural Sciences	65	BIO elective, 3 hours (lower division)
POLITICAL SCIENCE	American Government	50	POL 1013**
PSYCHOLOGY	Introductory Psychology	50	PSY 1013
SOCIAL SCIENCES	Please refer to History		
SOCIOLOGY	Introductory Sociology	50	SOC 1013
SPANISH	College Level Spanish Language	43 50 58 66	SPN 1014 SPN 1014, 1024 SPN 1014, 1024, 2013 SPN 1014, 1024, 2013, 2023

*All credit shown in this table as elective credit is lower division unless otherwise indicated.
** This credit is earned after completion of POL 1133 (Texas Politics and Society). Any substitutions or equivalencies allowed by an advisor will not be the responsibility of Testing Services.

The University of Texas at San Antonio accepts credit by examination through several testing venues. In accordance with Section 51.968 of the Texas Education Code, students who receive an International Baccalaureate (IB) diploma will be eligible for a minimum of 24 hours course credit if scores of "4" or better were achieved on all IB examinations attempted. The current articulation of how credit will be disseminated for standard level IB examinations is available on the Testing Services Web site at http://utsa.edu/testing/.

International Baccalaureate Certificate students can currently receive the following course credit for the higher level IB exams if they meet the score criteria listed in the following table.

INTERNATIONAL BACCALAUREATE CERTIFICATE EXAMINATION

Examination	UTSA Course	Minimum Score Required
	COLLEGE OF BUSINESS	
Business Management	MKT 3013	4
	COLLEGE OF LIBERAL AND FINE ARTS	
Anthropology	ANT 2053	6
Art/Design	ART 1003	5
English Language A1 or A2	WRC 1013, 1023	5
French A1 or A2	FRN (3 hours upper division)	3
	FRN (6 hours upper division)	4
	FRN (9 hours upper division)	5
French Language B	FRN 1014, 1024, 2013	3
	FRN 1014, 1024, 2013, 2023	4
	FRN 1014, 1024, 2013, 2023 & 6 hours upper division	5
	FRN 1014, 1024, 2013, 2023 & 9 hours upper division	6
German Language A1 or A2	GER (3 hours upper division)	3
	GER (6 hours upper division)	4
	GER (9 hours upper division)	5
German Language B	GER 1014, 1024, 2013	3
	GER 1014, 1024, 2013, 2023	4
	GER 1014, 1024, 2013, 2023 & 6 hours upper division	5
	GER 1014, 1024, 2013, 2023 & 9 hours upper division	6
Geography	GRG 1023, 3213, 3633, POL 3463	5
History, European	HIS (3 hours at sophomore level)	6
History, African	HIS (3 hours at sophomore level)	6
History, American	HIS (3 hours at sophomore level)	6
Italian Language A1 or A2	ITL (3 hours upper division)	3
	ITL (6 hours upper division)	4
	ITL (9 hours upper division)	5
Italian Language B	ITL 1014, 1024, 2013	3
	ITL 1014, 1024, 2013, 2023	4
	ITL 1014, 1024, 2013, 2023 & 6 hours upper division	5
	ITL 1014, 1024, 2013, 2023 & 9 hours upper division	6
Japanese Language A1 or A2	JPN (3 hours upper division)	3
	JPN (6 hours upper division)	4
	JPN (9 hours upper division)	5
Japanese Language B	JPN 1014, 1024, 2013	3
	JPN 1014, 1024, 2013, 2023	4
	JPN 1014, 1024, 2013, 2023 & 6 hours upper division	5
	JPN 1014, 1024, 2013, 2023 & 9 hours upper division	6
Music	MUS 2623	4
Philosophy	PHI 2013	5
Psychology	PSY 1013	5

INTERNATIONAL BACCALAUREATE CERTIFICATE EXAMINATION

Examination	UTSA Course	Minimum Score Required
Russian Language A1 or A2	RUS (3 hours upper division)	3
	RUS (6 hours upper division)	4
	RUS (9 hours upper division)	5
Russian Language B	RUS 1014, 1024, 2013	3
	RUS 1014, 1024, 2013, 2023	4
	RUS 1014, 1024, 2013, 2023 & 6 hours upper division	5
	RUS 1014, 1024, 2013, 2023 & 9 hours upper division	6
Sociology	SOC 3253, 3373	4
Spanish Language A1 or A2	SPN (3 hours upper division)	3
	SPN (6 hours upper division)	4
	SPN (9 hours upper division)	5
Spanish Language B	SPN 1014, 1024, 2013	3
	SPN 1014, 1024, 2013, 2023	4
	SPN 1014, 1024, 2013, 2023 & 6 hours upper division	5
	SPN 1014, 1024, 2013, 2023 & 9 hours upper division	6
COLLEGE OF SCIENCES		
Biology	BIO 1404, 1413	4
Chemistry	CHE 1103, 1121 (lab)	4
	CHE 1103, 1121 (lab), 1113, 1131 (lab)	5
Computer Science	CS 1063, 1713	4
Environmental Science	ES 2013, 2023, 2021, 2031	4
Mathematics	MAT 1093, 1214	4
Physics	PHY 1013	5

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